CCD-CR1/CR1E

SERVICE MANUAL

Self Diagnosis Supported model

Ver 1.0 1998. 08

US Model
Canadian Model
CCD-CR1
AEP Model
UK Model
E Model
CCD-CR1E

Ruvi

SPECIFICATIONS

Video camera recorder

System

Video recording system
2 rotary heads
Helical scanning FM system
Audio recording system
Rotary heads, FM system
Video signal
NTSC color, EIA standards (CR1)
PAL color, CCIR standards (CR1E)
Recording / Playback time
30 min.
Fast-forward/rewind time
Approx. 2 min.
Image device
CCD (Charge Coupled Device)
Lens
Combined power zoom lens
3 × (Optical)
Focal distance
3.4 - 10.2 mm (5/32 - 13/32 in.)
(33 - 99 mm (1 5/16 - 4 in.) when converted to a 35 mm still camera)
F 2.8 - 3.9
Color temperature
Auto
Minimum illumination*
12 lux (F 2.8) (CR1)
6 lux (F 2.8) (CR1E)
Illumination range
12 lux to 100,000 lux (CR1)
6 lux to 100,000 lux (CR1E)
Recommended illumination
More than 100 lux

Output connector

Video/Audio output
AV mini jack
Video: 75 ohms, unbalanced, sync negative
Audio: 327 mV, (47 kilohms) at output impedance less than 2.2 kilohms

LCD screen

Picture
2.5 inches measured diagonally
50.2 × 37.1 mm (2 × 1 1/2 in.)
On-screen display
Reflection method
Total dot number
61,380 (279 × 220)

General

Power requirements
3.0 V LR6 (size AA) batteries X 2
3.6 V Battery pack
4.2 V AC adaptor/charger
Average power consumption (when using LR6 (size AA) batteries X 2)
During camera recording : 2.0 W
Operating temperature
0°C to 40°C (32°F to 104°F)
Storage temperature
–20°C to +60°C (–4°F to +140°F)
Dimensions (Approx.)
124.3 x 66.5 x 44.1 mm (w/h/d)
(5 x 2 5/8 x 1 3/4 in.)
Mass (Approx.)
330 g (12 oz)
(including the video cartridge 110 g (4 oz), excluding the batteries)
When operating :
380 g (13 oz)
(including the two LR6 (size AA) batteries)
370 g (13 oz)
(including the NP-F10 battery pack)
Microphone
Monaural type
Speaker
Piezo electric speaker
Supplied accessories
VD-CR1 Video cartridge (1, already installed in your camcorder)
LR6 (size AA) batteries (2)
NP-F10 Battery pack (1)
AC-VF10 AC adaptor/charger (1)
DK-115 DC connecting cord (1)
Power cord (1)
A/V connecting cable (1)
Hand strap (1, already attached to your camcorder)
Lens cap (1)
Soft case (1)

AC adaptor/ charger

Power requirements
100 - 240 V AC, 50/60 Hz
Output voltage
DC OUT:
4.2 V, 1.8 A in operating mode
4.2 V, 1.4 A in charging mode
Power consumption
23 W
Operating temperature
0°C to 40°C (32°F to 104°F)
Storage temperature
–20°C to +60°C (–4°F to +140°F)
Dimensions (Approx.)
85 × 49 × 39 mm (w/h/d)
(3 3/8 x 1 15/16 x 1 9/16 in.)
excluding projecting parts
Mass (Approx.)
280 g (9 oz) excluding power cord
Cord length (Approx.)
AC power cord: 2 m
Connecting cord: 2 m

Battery pack

Output voltage
3.6 V
Rating capacity
3.6 Wh
Battery used
Lithium-ion battery

Design and specifications are subject to change without notice.

VIDEO CAMERA RECORDER

MICROFILM

SONY®

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈSES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270˚C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

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* The color reproduction frame is shown on page 173.

SERVICE NOTE

1. POWER SUPPLY DURING REPAIRS

In this unit, about 5 seconds after power is supplied (4.2V) to the battery terminal using a regulated power supply, the power is shut off so that the unit cannot operate.
This following three methods are available to prevent this. Take note of which to use during repairs.

Method 1.
Decrease the voltage to 3Vdc.

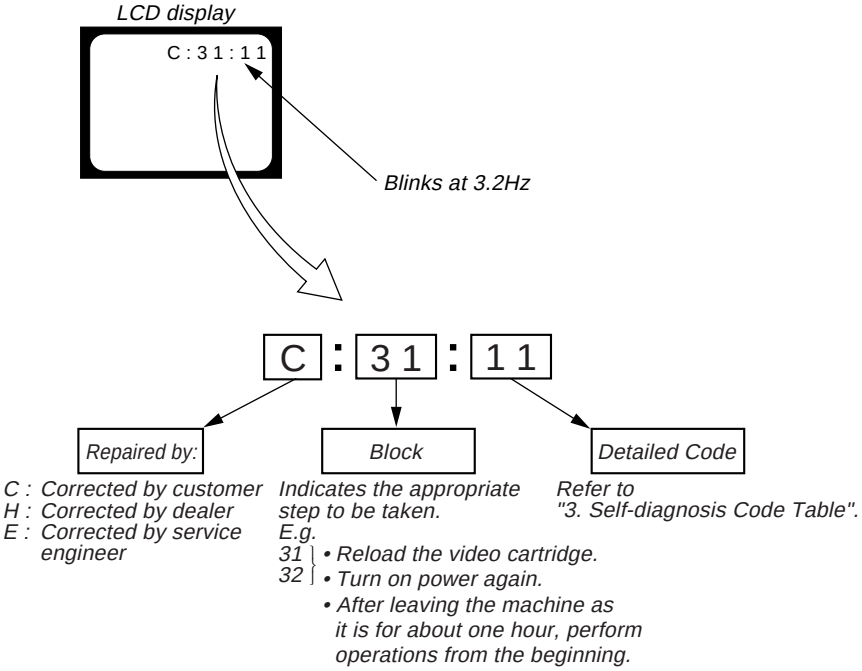
Method 2.
Connect the servicing remote commander RM-95 (J-6082-053-B), and set the remote commander switch to the “ADJ” side.

Method 3.
Use the AC power adaptor.

SELF-DIAGNOSIS FUNCTION

1. SELF-DIAGNOSIS FUNCTION

When problems occur while the unit is operating, the self-diagnosis function starts working, and displays on the LCD display what to do. This function consists of two display; self-diagnosis display and service mode display.
Details of the self-diagnosis functions are provided in the Instruction manual.


LCD display
C : 3 1 : 1 1
Blinks at 3.2Hz
C : 3 1 : 1 1
Repaired by:
Block
Detailed Code
C : Corrected by customer
H : Corrected by dealer
E : Corrected by service engineer
Indicates the appropriate step to be taken.
E.g.
31 } • Reload the video cartridge.
32 } • Turn on power again.
• After leaving the machine as it is for about one hour, perform operations from the beginning.
Refer to "3. Self-diagnosis Code Table".

2. SELF-DIAGNOSIS DISPLAY

When problems occur while the unit is operating, the counter of the LCD display consists of an alphabet and 4-digit numbers, which blinks at 3.2 Hz. This 5-character display indicates the “repaired by:”, “block” in which the problem occurred, and “detailed code” of the problem.

3. SELF-DIAGNOSIS CODE TABLE

Self-diagnosis Code				Symptom/State	Correction
Repaired by:	Block Function		Detailed Code		
C	1	2	8 0	Format of the video cartridge is different.	Use the video cartridge of correct format.
C	2	2	0 0	Video head is dirty.	
C	2	3	0 0	Non-standard battery is used.	Use the InfoLITHIUM battery.
C	3 3	1 2			• Load the video cartridge again, and perform operations from the beginning. • Remove the battery or power cable, connect, and perform operations from the beginning. • After leaving the machine as it is for about one hour, perform operations from the beginning.

SECTION 1
GENERAL

This section is extracted from instruction manual. (CCD-CR1E)

Before you begin

Before operating the unit, please read this manual thoroughly, and retain it for future reference.

About the recording system

- The picture and sound are recorded onto the video cartridge for this camcorder.
- The video cartridge for this camcorder is installed already. You can only use the VD-CR1 video cartridge.
- The video cartridge can be recorded for about 30 minutes camera recording and about 350 still pictures per about 5 seconds.
- It is recommended to edit the recorded pictures onto another tape for saving.

Using this manual

As you read through this manual, buttons and settings on the camcorder are shown in capital letters.
e.g., Press START/STOP.
You can hear the beep sound to confirm your operation.

Note on TV color systems

TV color systems differ from country to country. To view your recordings on a TV, you need a PAL system-based TV.

Precaution on copyright

Television programs, films, video tapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provision of the copyright laws.

Contents of the recording cannot be compensated if recording or playback is not made due to a malfunction of the camcorder, video cartridge, etc.

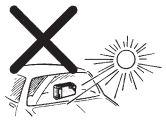
EN

Precautions on camcorder care

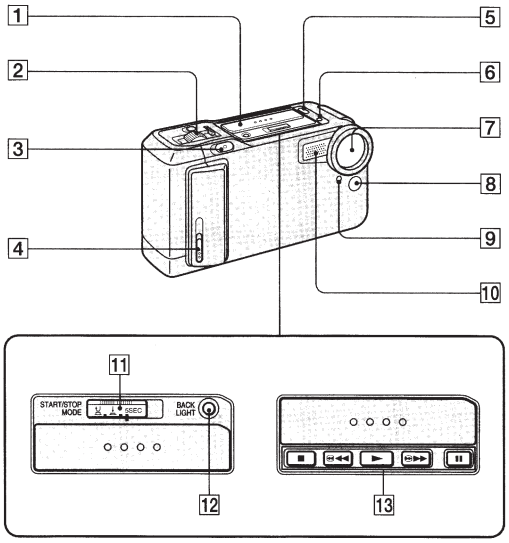
- **The LCD screen is manufactured using high-precision technology. However, there may be some tiny black points and/or bright points (red, blue or green in color) that constantly appear on the LCD screen. These points are normal in the manufacturing process and do not affect the recorded picture in any way. Over 99.99% are operational for effective use.**
- Do not let the camcorder get wet. Keep the camcorder away from rain and sea water. Letting the camcorder get wet may cause the unit to malfunction, and sometimes this malfunction cannot be repaired **[a]**.
- Never leave the camcorder exposed to temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight **[b]**.
- Do not let sand get into the camcorder. When you use the camcorder on a sandy beach or in a dusty place, protect it from the sand or dust. Sand or dust may cause the unit to malfunction, and sometimes this malfunction cannot be repaired.

[a]

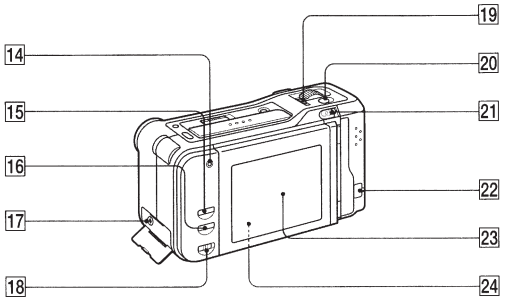
[b]



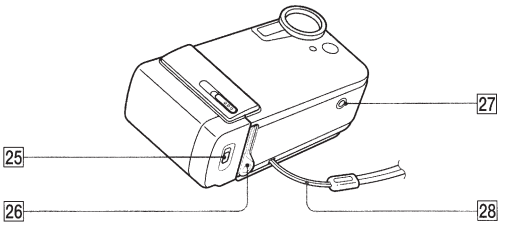
Identifying the parts



1 **Slide cover** (p. 20)
2 **Zoom lever** (p. 15)
3 **START/STOP button** (p. 12)
4 **Open knob for video cartridge compartment** (p. 31)
5 **END SEARCH button** (p. 18, 22)
6 **PHOTO SCAN button** (p. 21, 22)
7 **Lens**
8 **Remote sensor**
You can use the remote commander supplied with other Sony camcorders or VCRs. Set the command mode to VTR 2. See the instruction manual supplied with the VCR about the command mode.
9 **Recording lamp** (p. 12, 14)
10 **Microphone**
11 **START/STOP MODE switch** (p. 13)
12 **BACK LIGHT button** (p. 17)
13 **Video control buttons** (p. 22)
■ STOP (stop)
◄◄ REW (rewind)
► PLAY (playback)
►► FF (fast-forward)
❚❚ PAUSE (pause)

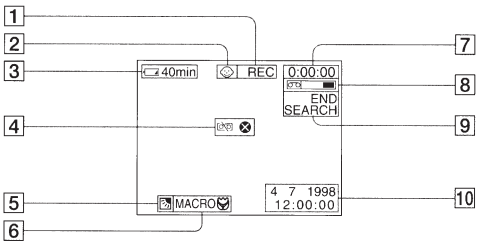


14 **Recording lamp** (p. 12, 14)
15 **DATE button** (p. 19, 25)
16 **TIME button** (p. 19, 25)
17 **A/V OUT jack** (p. 23)
18 **SPEAKER ON/OFF switch** (p. 20)
19 **MACRO lock switch** (p. 15)
20 **PHOTO button** (p. 14)
21 **POWER ON/OFF switch** (p. 12)
22 **Cord cover** (p. 10)
23 **LCD screen** (p. 12, 14, 20)
24 **Speaker** (p. 20)



25 **OPEN (BATT) release lever** (p. 8)
26 **Cartridge eject lever** (p. 31)
27 **Tripod receptacle** (p. 15)
Make sure that the length of the tripod screw is less than 6.5 mm (9/32 in.), otherwise you cannot attach the tripod securely and the screw may damage the camcorder.
28 **Hand strap**
The hand strap is already attached.

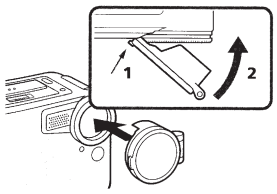
Operation indicators



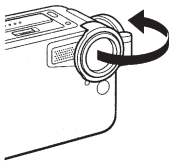
1 **Video control mode** (p. 22)
2 **Mirror mode indicator** (p. 16)
3 **Remaining battery time indicator**
4 **Warning indicators** (p. 34)
5 **Backlight indicator** (p. 17)
6 **MACRO indicator** (p. 15)
7 **Tape counter** (p. 12)/**Self-diagnosis functions indicator** (p. 35)/**5SEC mode indicator** (p. 13)/**Photo recording indicator** (p. 14)
8 **Remaining tape indicator**
9 **END SEARCH indicator** (p. 18, 22)/**PHOTO SCAN indicator** (p. 21, 22)
10 **Date and time indicator** (p. 19, 25)

Attaching the lens cap

Attach the supplied lens cap to the lens.
(1) Fit the edge of the lens cap to the hollow.
(2) Push the lens cap until it clicks.



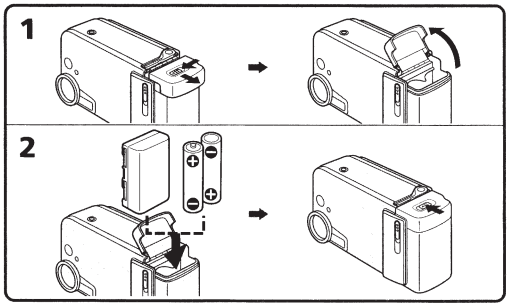
When you shoot, open the lens cap.



Getting started

Installing the batteries

Before using your camcorder, you first need to install two LR6 (size AA) Sony batteries or the charged battery pack. Use the supplied LR6 (size AA) Sony batteries or the NP-F10 "InfoLITHIUM" battery pack.
When you install or remove the batteries, be sure to turn off the camcorder to prevent misoperation of the camcorder.
You can also use house current as a power source. (P. 10)
(1) To open the lid of the battery compartment, slide the OPEN (BATT) release lever at the bottom of the camcorder to the left, then slide it toward you and release.
(2) Install two LR6 (size AA) batteries or the battery pack in the direction of the arrow. Then close the lid and slide it until it clicks.



Note on LR6 (size AA) batteries
- Be sure to install two LR6 (size AA) batteries with correct polarity.
- You can not use LR6 (size AA) batteries in a cold environment. Use the NP-F10 battery pack .

Battery life

When using two LR6 (size AA) Sony batteries or the NP-F10 rechargeable battery pack:

Battery	LR6 (size AA) batteries	NP-F10
Continuous recording time*	60 minutes	90 (80) minutes
Typical recording time**	30 minutes	50 (45) minutes
Playing time on LCD	60 minutes	90 (80) minutes

Numbers in parentheses of NP-F10 indicate the time when you use a normally charged battery.
* Approximate continuous recording time at 25°C (77°F). Battery life will be shorter if you use the camcorder in a cold environment.
** Approximate minutes when recording while you repeat recording start/stop and turning the power on/off. The actual battery life may be shorter.

Note on remaining battery time indication during recording
When using the "InfoLITHIUM" battery, remaining battery time is displayed on the LCD screen. However, the indication may not be displayed properly, depending on the conditions and circumstances of use.

To remove batteries

Open the lid of the battery compartment and remove the batteries.

When removing batteries
Always turn the camcorder upside down so that batteries do not fall out when you open the lid.

Using house current

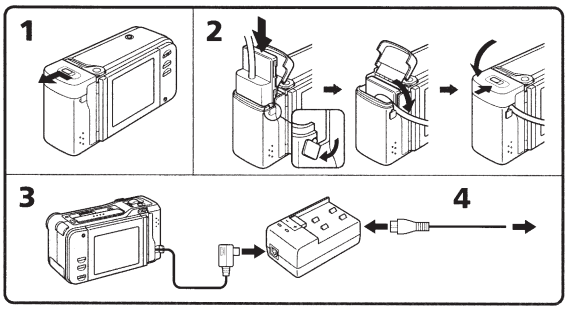
When you install or remove the battery shaped block of the connecting cord, turn off the camcorder to prevent misoperation of the camcorder.

(1) To open the lid of the battery compartment, slide the OPEN (BATT) release lever at the bottom of the camcorder to the left, then slide it toward you and release.

(2) Install the battery shaped block of the DC connecting cord in the direction of the arrow. Open the cord cover and pass the cord through. Then close the lid and slide it until it clicks.

(3) Connect the DC connecting cord to the AC adaptor/charger.

(4) Connect the power cord to the AC adaptor/charger and a wall outlet.



WARNING
The power cord must be changed only at a qualified service shop.

Note
Keep the AC adaptor/charger away from the camcorder if the picture is affected.

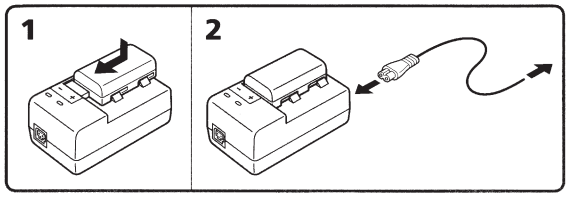
Charging the battery pack

Charge the battery pack on a flat surface without vibration. The supplied battery pack NP-F10 is charged a little at the factory. To charge the battery pack, use the supplied AC-VF10 AC adaptor/charger.

(1) Fit and slide the battery pack in the direction of the arrow.

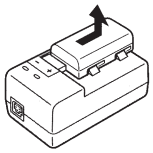
(2) Connect the power cord to the AC adaptor/charger and a wall outlet. The CHARGE lamp (orange) lights up. Charging begins.

When the CHARGE lamp goes out, **normal charge** is completed. For **full charge**, which allows you to use the battery longer than usual, leave the battery pack attached for about 1 hour after normal charge is completed.



To remove the battery pack

Slide the battery pack in the direction of the arrow.



Charging time

When using the NP-F10 rechargeable battery pack:

Charging time*	145 (85) minutes

The number in parentheses indicates the time when you use a normally charged battery.

* Approximate minutes to charge an empty battery pack using the supplied charger. (Lower temperatures require a longer charging time.)

Shooting

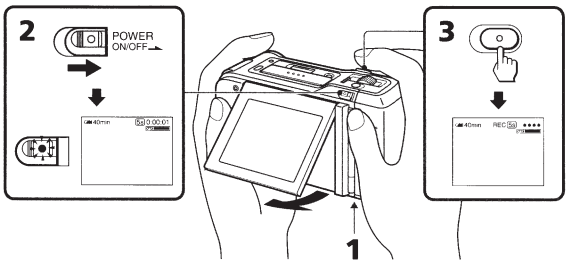
Camera recording

Before you record one-time events, you may want to make a trial recording to make sure that the camcorder is working correctly.

(1) Make sure that the power source is installed. (p. 8, 10)

(2) While pressing the small button on the POWER switch, slide it in the direction of the arrow. The small button lights up green.

(3) Press START/STOP. The camcorder records for about 5 seconds and stops. The tape counter disappears and five dots appear. The dots disappear at a rate of one per second. The red lamps light up.
To extend the recording time in 5SEC mode, press START/STOP again before all the dots disappear. Recording continues for about 5 seconds from the moment you press START/STOP.



Adjusting the LCD panel angle
Adjust the LCD panel to the angle you want.

Note
To save battery power and prevent the battery and tape from wearing down, the power turns off automatically if you do not operate the camcorder for 5 minutes while the video cartridge is inserted and the power is on. To start recording, turn the power on again and press START/STOP.

Camera recording

Selecting the START/STOP mode

Your camcorder has three camera recording modes. These modes enable you to take a series of quick shots resulting in a lively video.

Set START/STOP MODE to the desired mode.

5SEC: When you press START/STOP, the camcorder records for about 5 seconds and then stops automatically (factory setting).

ANTI GROUND SHOOTING : The camcorder records only while you press down START/STOP so that you can avoid recording unnecessary scenes.

: Recording starts when you press START/STOP, and stops when you press it again.

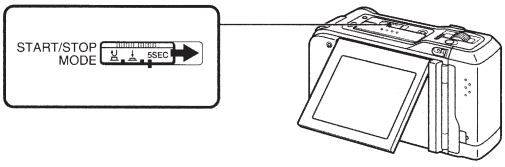
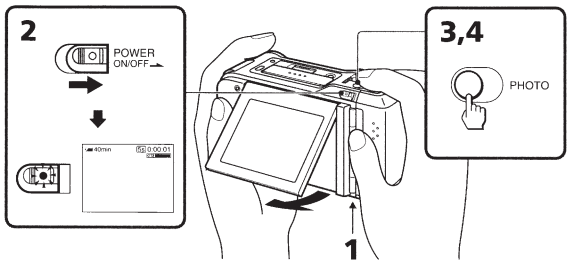


Photo recording

You can record a still picture like a photograph for about five seconds. Photo recording is useful when you want to enjoy a picture such as a photograph or when you print a picture using a video printer.

(1) Make sure that the power source is installed. (p. 8, 10)
(2) While pressing the small button on the POWER switch, slide it in the direction of the arrow. The small button lights up green.
(3) Keep pressing PHOTO lightly until a still picture and "📷 CAPTURE" appear on the LCD screen. To change the still picture, release PHOTO, select still picture again, and keep pressing PHOTO lightly again.
(4) Press PHOTO deeper. The still picture on the LCD screen is recorded for about five seconds. The tape counter disappears and five dots appear. The dots disappear at a rate of one per second. The red lamps light up. The sound during those five seconds is also recorded.



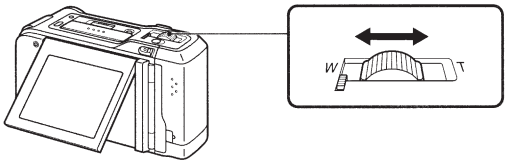
Adjusting the LCD panel angle
Adjust the LCD panel to the angle you want.

To prevent camera-shake
When shooting a still picture, the slightest movement of the camcorder is noticeable. To prevent camera-shake, hold the camcorder firmly or use a tripod.

Advanced operations

Using the zoom feature

Zooming is a recording technique that lets you change the size of the subject in the scene.
For more professional-looking recordings, use the zoom function sparingly.
"T" side: for telephoto (subject appears closer)
"W" side: for wide-angle (subject appears farther away)

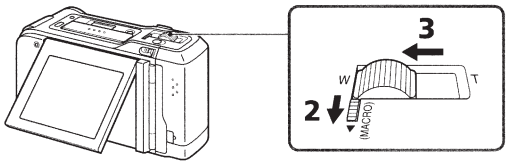


When you shoot a subject using the telephoto zoom
If you cannot get a sharp focus while in extreme telephoto zoom, move the zoom lever to the "W" side until the focus is sharp. You can shoot a subject that is at least about 140 cm (55 1/8 in.) away from the lens surface in the telephoto position, or about 40 cm (15 3/4 in.) away in the wide-angle position. When you shoot a subject closer than about 40 cm (15 3/4 in.), we recommend you shoot in macro.

Shooting a subject closer – Macro

Even small subjects, such as flowers, insects, and images in photographs, can literally fill the screen in macro. You can shoot a subject that is at least about 10 cm (4 in.) away from the lens surface in macro.
We recommend you to use a tripod when shooting in macro.

(1) Bring the camcorder as close as necessary to obtain the desired subject size.
(2) Slide the MACRO lock switch in the direction of the arrow.
(3) Move the zoom lever to the "W" side end. The MACRO 🌷 indicator appears on the LCD screen.



Letting the subject monitor the shot (Mirror mode)

You can turn the LCD panel over so that it faces the other way and you can let the subject monitor the shot.

(1) Turn the LCD panel up vertically. The ☺ indicator (Mirror mode) appears and the date and remaining tape indicators disappear.
(2) Start recording.

[a] LCD screen image.
[b] Recording image.

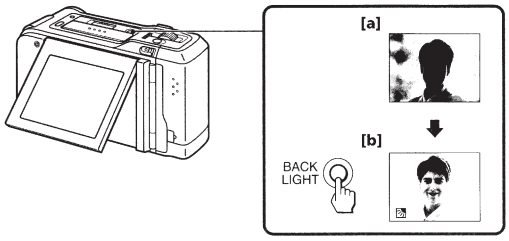
To cancel mirror mode
Turn the LCD panel down toward the camcorder body.

Notes on mirror mode
- The picture on the LCD appears as a mirror-image while recording in mirror mode. The REC indicator appears as ●. The other indicators may not appear in mirror mode.
- While recording in mirror mode, you cannot operate the DATE and TIME.

Shooting with backlighting

When you shoot a subject with the light source behind the subject or a subject with a light background, use the BACK LIGHT function.

Press BACK LIGHT. The ◪ indicator appears on the LCD screen.



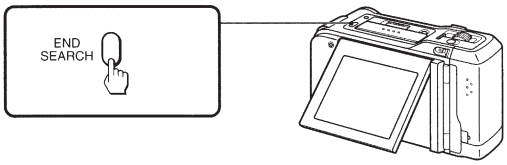
[a] Subject is too dark because of backlight.
[b] Subject becomes bright with backlight compensation.

After shooting
Be sure to release this adjustment condition by pressing BACK LIGHT again. The ◪ indicator disappears. Otherwise, the picture will be too bright under normal lighting conditions.

This function is also effective under the following conditions:
- A subject with a light source nearby or a mirror reflecting light.
- A white subject against a white background. Especially when you shoot a person wearing shiny clothes made of silk or synthetic fiber, his or her face tends to become dark if you do not use this function.

Searching for the end of the picture

Press END SEARCH during stop.
The tape starts rewinding or fast-forwarding and the last 5 seconds of the recorded portion play back. Then the tape stops at the end of the recorded picture.

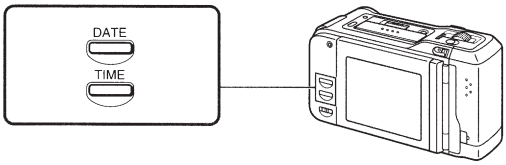


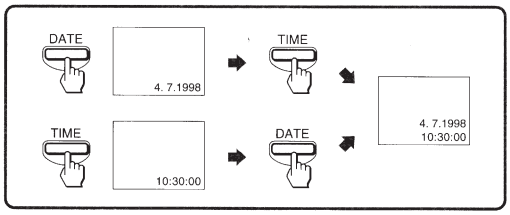
If you start recording after using END SEARCH
Occasionally, the transition between the last scene you recorded and the next scene may not be smooth.

Recording with the date/time

Before you start recording or during recording, press DATE and/or TIME. You can record the date and/or time displayed on the LCD screen with the picture. Press DATE (or TIME), then press TIME (or DATE) to display the date and time together. Except for the date and/or time indicator, no indicator on the LCD screen is recorded.
The clock is set at the factory to London time for the United Kingdom and Paris time for the other European countries. You can reset the clock. (p.25)

Press DATE and/or TIME before you start recording or during recording.





Note on recording with the date and/or time
Once you record the date and/or time, you cannot erase it.

To stop recording with the date and/or time

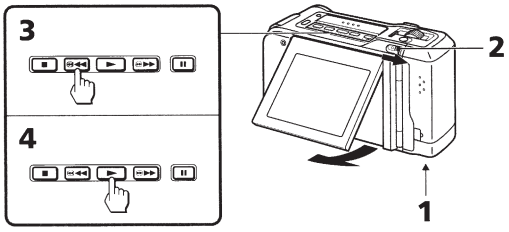
Press DATE and/or TIME again. The date and/or time indicator disappears. The recording continues.

To finish recording

While pressing the small button on the POWER switch, slide it to turn off the camcorder. And remove the batteries.
We recommend you turn off the camcorder to prevent wearing down the battery while you do not use the camcorder.

Playing back

You can monitor the playback picture on the LCD screen.
(1) Make sure that the power source is installed. (p. 8, 10)
(2) While pressing the small button on the POWER switch, slide it in the direction of the arrow. The small button lights up green.
(3) Press ◄◄ to rewind the tape.
(4) Press ► to start playback.
You can also monitor the picture on a TV screen, after connecting the camcorder to a TV or VCR.

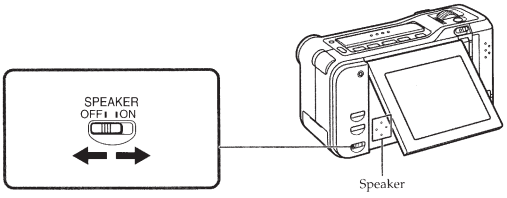


Adjusting the LCD panel angle
Adjust the LCD panel to the angle you want.

When playing back in the dark
You may find it difficult to view the LCD screen in the dark. We recommend you to monitor the playback picture on the LCD screen where there is more light.

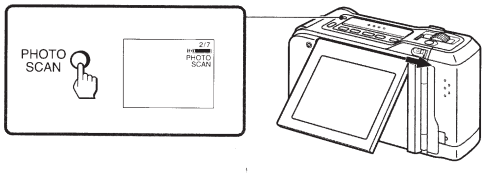
To turn off the speaker

Slide the SPEAKER ON/OFF switch to OFF. To turn on the speaker, slide it to ON.



Searching for still pictures

You can search for still pictures one after another and display each picture for about 8 seconds automatically (Photo Scan).
(1) Make sure that the power source is installed. (p. 8, 10)
(2) While pressing the small button on the POWER switch, slide it in the direction of the arrow. The small button lights up in green.
(3) Press ◄◄ to rewind the tape to the beginning.
(4) Press PHOTO SCAN during stop.
Photo scan indicator appears on the LCD screen. Each still picture is displayed for about 8 seconds automatically. The number of the displayed picture and total number of the still pictures are displayed.



To stop searching

Press PHOTO SCAN or ■.

Notes on Photo Scan
• The sound is muted.
• The camcorder starts searching from where you pressed PHOTO SCAN.

Playing back

Various playback modes

To stop playback
Press ■.

To view a still picture (playback pause)
Press ❚❚ during playback. To resume playback, press ❚❚ or ►.

To fast-forward the tape rapidly
Press ►►. To resume playback, press ►.

To rewind the tape
Press ◄◄. To resume playback, press ►.

To locate a scene (picture search)
Keep pressing ◄◄ or ►► during playback. To resume normal playback, release the button.

To monitor the high-speed picture while advancing the tape or rewinding (skip scan)
Keep pressing ◄◄ while rewinding or ►► while advancing the tape. To resume rewinding or advancing, release the button. To resume normal playback, press ►.

To search for the end of the picture (End Search)
Press END SEARCH during stop. The tape starts rewinding or fast-forwarding and the last 5 seconds of the recorded portion play back. Then the tape stops at the end of the recorded picture.

To search for still pictures (Photo Scan)
Press PHOTO SCAN during stop. Each picture is displayed for about 8 seconds automatically. Then the tape stops at the end of the recorded still picture.

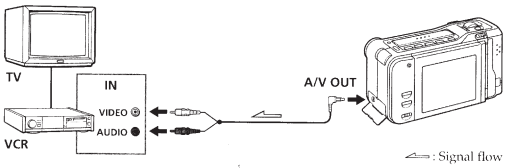
Notes on playback
- The following may occur in the various playback modes.
  - Streaks appear and the picture jitters.
  - The sound is muted.
- When playback pause mode lasts for 5 minutes, the camcorder automatically turns off to save battery power and prevent the battery and tape from wearing down. To start viewing a still picture, turn the power on again and press ❚❚ during playback.

Watching on a TV screen

Connect the camcorder to your TV or VCR to watch the playback picture on the TV screen. Use the supplied A/V connecting cable. When monitoring the playback picture by connecting the camcorder to your TV, we recommend you to use house current for the power source.

Connecting directly to a TV/VCR with Video/Audio input jacks

Open the jack cover. Connect the yellow plug of the A/V connecting cable to video input on the TV or VCR connected to the TV. And connect the black plug of the A/V connecting cable to audio input on the TV or VCR connected to the TV.
Set the TV/VCR selector on the TV to VCR. When connecting to the VCR, set the input selector on the VCR to LINE.



If your TV or VCR is a stereo type
Connect only the black plug for audio L (left) on the TV or the VCR. With this connection, the sound is monaural even in stereo model.

When acoustic feedback (howling) occurs
Move the camcorder away from the TV or turn down the volume of the TV.

Editing
Editing onto another tape

You can save the recorded picture and create your own video program by editing with any other 8 8 mm, Hi8 Hi8, VHS VHS, S-VHS S-VHS, VHSC VHSC, S-VHSC S-VHSC, β Betamax VCR or DV DV that has video/audio inputs.

Before editing

Connect the camcorder to the VCR using the supplied A/V connecting cable.
Set the input selector on the VCR to LINE, if available.

If your VCR is a stereo type
Connect only the black plug for audio L (left) on the VCR. With this connection, the sound is monaural even in stereo models.

Starting editing

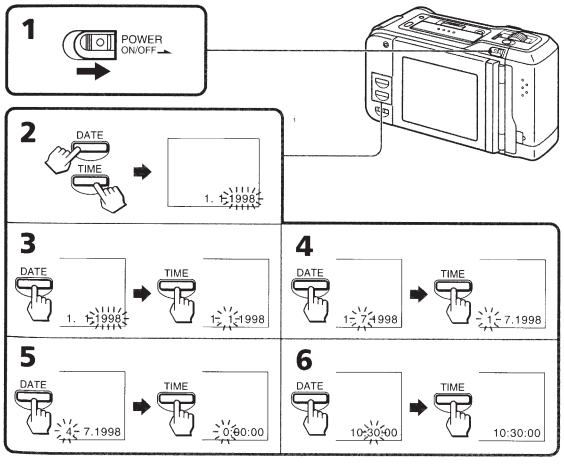
Turn off the speaker of the camcorder while editing. Otherwise, picture distortion may occur.
(1) Insert a blank tape (or a tape you want to record over) into the VCR.
(2) Play back the recorded video cartridge on the camcorder until you locate the point just before where you want to start editing, then press ❚❚ to set the camcorder in playback pause mode.
(3) On the VCR, locate the recording start point and set the VCR in recording pause mode.
(4) First press ❚❚ on the camcorder, and after a few seconds press ❚❚ on the VCR when you want to start editing.

To edit more scenes
Repeat steps 2 to 4.

To stop editing
Press ■ on both the camcorder and the VCR.

Additional information
Resetting the date and time

The DATE and/or TIME can be recorded with the picture. The date and time are set at the factory to London time for the United Kingdom and to Paris time for the other European countries. Set the time according to the local time in your country.
(1) While pressing the small button on the POWER switch, slide it in the direction of the arrow. The small button lights up green.
(2) Press DATE and TIME simultaneously for more than 2 seconds until the year flashes on the LCD screen.
(3) Set the year.
Adjust the flashing year digits with DATE and then press TIME.
(4) Set the month.
Adjust the flashing month digits with DATE and then press TIME.
(5) Set the day and hour by the same way as setting the year and month.
(6) Set the minute and second.
Adjust the flashing minute digits with DATE and then press TIME. The clock starts operating.



Resetting the date and time

About the lithium battery

Your camcorder is supplied with a rechargeable lithium battery installed so as to retain the date and time, regardless of the setting of the power. The lithium battery is always charged as long as you are using the camcorder. The battery, however, will discharge gradually if you use the camcorder for a short time. It will be completely discharged in about a half year if you do not use the camcorder for a long period. Even if the lithium battery is not charged, it will not affect the camcorder operation. To retain the date and time, charge the battery if the battery is discharged. The following are charging methods:

- Connect the camcorder to the house current using the supplied AC adaptor/charger, and leave the camcorder with the power turned off for more than 24 hours.
- Install the fully charged battery pack in the camcorder, and leave the camcorder with the power turned off for more than 24 hours.

To check the preset date and time

Press DATE to display the date indicator.
Press TIME to display the time indicator.
When you press the same button again, the indicator goes off.

The year changes as follows:

1998 ⟷ 1999 ⟵ ···· ⟶ 2029

Note on the time indicator

The internal clock of this camcorder operates on a 24-hour cycle.

Tips for using batteries

This section shows you how you can get the most out of your batteries.

Preparing the batteries

Always carry additional batteries

Have sufficient battery power to do 2 to 3 times as much recording as you have planned.

Battery life is shorter in a cold environment

You cannot use LR6 (size AA) batteries in a cold environment. Use the battery pack NP-F10.
Battery efficiency is decreased, and the battery pack will be used up more quickly, if you are recording in a cold environment.

To save battery power

Turn off the camcorder when not recording to save battery power.
A smooth transition between scenes can be made even if recording is stopped and started again. While you are positioning the subject, selecting an angle, or looking on the LCD screen, the battery is used.

When to replace the battery

While you are using your camcorder, the remaining battery indicator decreases gradually as battery power is used up. When you use the "InfoLITHIUM" battery pack, remaining time in minutes appears.

When the remaining battery indicator reaches the lowest point, the ⌓ indicator may appear and start flashing on the LCD screen.
When the ⌓ indicator changes from slow flashing to rapid flashing while you are recording, turn off the camcorder replace the battery pack or LR6 (size AA) batteries. Leave the video cartridge in the camcorder to obtain a smooth transition between scenes after the battery pack has been replaced.

Notes on the "InfoLITHIUM" battery pack

What is "InfoLITHIUM"

This camcorder operates only with the "InfoLITHIUM" battery pack (NP-F10).
"InfoLITHIUM" is a trademark of Sony Corporation.
The "InfoLITHIUM" is a lithium ion battery pack which can exchange data with compatible video equipment about its battery consumption.

To obtain more accurate remaining battery indication

Turn on the camcorder and point towards a stationary object. Do not move the camcorder for 30 seconds or more.

Caution

Never leave the battery pack in temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight.

The battery pack heats up

During charging or recording, the battery pack heats up. This is caused by energy that has been generated and a chemical change that has occurred inside the battery pack. This is normal and is not cause for concern.

Be sure to observe the following

- Keep the battery pack away from fire.
- Keep the battery pack dry.
- Do not open nor try to disassemble the battery pack.
- Do not expose the battery pack to any mechanical shock.

The life of the battery pack

If the battery indicator flashes rapidly just after turning on the camcorder with a fully charged battery pack, the battery pack should be replaced with a new fully charged one.

Charging temperature

You should charge batteries at temperatures from 10°C to 30°C (from 50°F to 86°F). Lower temperatures require a longer charging time.

Notes on LR6 (size AA) batteries

To avoid possible damage from battery leakage or corrosion, observe the following.

- Be sure to insert the batteries in the correct direction.
- Dry batteries are not rechargeable.
- Do not use a combination of new and old batteries.
- Do not use different types of batteries.
- The batteries slowly discharge while not in use.
- Do not use a battery that is leaking.

If battery leakage occurred

- Wipe off the liquid in the battery case carefully before replacing the batteries.
- If you touch the liquid, wash it off with water.
- If the liquid get into your eyes, wash your eyes with a lot of water and then consult a doctor.

Notes on AC adaptor/charger

- Unplug the unit from the wall outlet when not in use for a long time. To disconnect the power cord, pull it out by the plug. Never pull the power cord itself.
- Do not operate the unit with a damaged cord or if the unit has been dropped or damaged.
- Do not bend the power cord forcibly, or put a heavy object on it. This will damage the cord and may cause a fire or electrical shock.
- Be sure that nothing metallic comes into contact with the metal parts of the connecting plate. If this happens, a short may occur and the unit may be damaged.
- Always keep the metal contacts clean.
- Do not disassemble the unit.
- Do not apply mechanical shock or drop the unit.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment because it will disturb AM reception and video operation.
- The unit becomes warm while in use. This is normal.
- Do not place the unit in locations that are:
  - Extremely hot or cold
  - Dusty or dirty
  - Very humid
  - Vibrating

If any difficulty should arise, unplug the unit and contact local authorized Sony service facility.

Precautions

Camcorder operation

- Operate the camcorder on 3.0 V (LR6 (size AA) batteries X 2), 3.6 V (battery pack) or 4.2 V (AC adaptor/charger).
- For AC operation, use the accessories recommended in this manual.
- Should any solid object or liquid get inside the casing, unplug the camcorder and have it checked by local authorized Sony service facility before operating it any further.
- Avoid rough handling or mechanical shock. Be particularly careful of the lens.
- Keep the power turned off when not using the camcorder.
- Do not wrap up the camcorder and operate it since heat may build up internally.
- Keep the camcorder away from strong magnetic fields or mechanical vibration.
- Do not push the LCD screen.
- If the camcorder is used in a cold place, a residual image may appear on the LCD screen. This is not a malfunction.

Camcorder care

- When the camcorder will not to be used for a long time, rewind the tape to the beginning and remove the batteries. Periodically turn on the power, operate the camera and player sections and play back for about 3 minutes.
- If fingerprints or dust make the LCD screen dirty, we recommend using a LCD Cleaning Kit (not supplied) to clean the LCD screen.
- Clean the camcorder lens with a soft brush to remove dust. If there are fingerprints on it, remove them with a soft cloth.
- Clean the camcorder body with a dry soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.

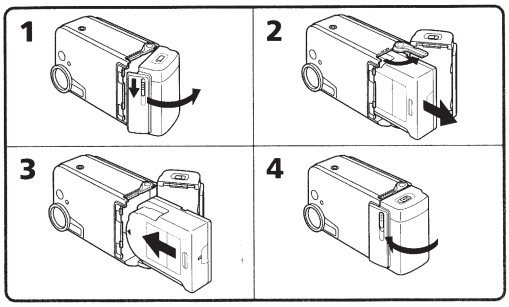
About the video cartridge

The video cartridge can be recorded for about 30 minutes of camera recording and about 350 still pictures. When you record and rewind several hundred times, playback pictures become hard to see. In this case, the video cartridge should be replaced with a new video cartridge (not supplied). For more information about the video cartridge, contact local authorized Sony service facility.

[a] Normal
[b] Unclear

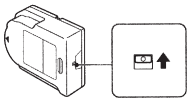
To change the video cartridge

(1) To open the lid of the video cartridge compartment, slide the knob in the direction of the arrow.
(2) Slide the eject lever in the direction of the arrow, and remove the video cartridge.
(3) Insert the new video cartridge with the ◀ mark facing toward until it clicks.
(4) Close the lid.



To prevent misoperation
When you install or remove the video cartridge, turn off the camcorder to prevent misoperation of the camcorder.

To prevent accidental erasure
Slide the tab on the video cartridge to expose the red mark. If you try to record with the red mark exposed, you cannot record. To re-record on this video cartridge, slide the tab back out to cover the red mark.



Trouble check

If you run into any problem using the camcorder, use the following table to troubleshoot the problem. Should the difficulty persist, disconnect the power source and contact local authorized Sony service facility.

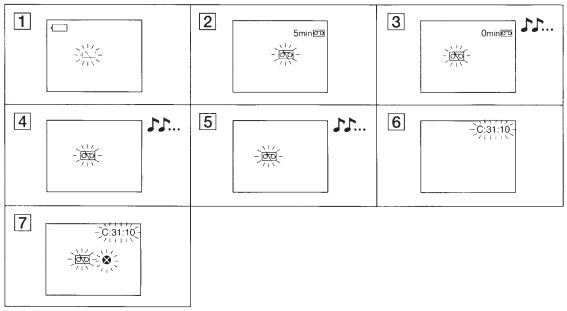
Camcorder

Symptom	Cause and/or Corrective Actions
START/STOP does not operate.	• The tape has run out. → Rewind the tape. (p. 20) • The tab on the video cartridge is out (red). → Use a new video cartridge or slide the tab back. (p. 31) • The video cartridge is not installed. → Install the video cartridge. (p. 31)
Recording stops in a few seconds.	• The START/STOP MODE switch is set to 5SEC or ⏏. → To record continuously, set it to ⏏. (p. 13)
The power goes off.	• When the power is on and the camcorder has not been operated for more than 5 minutes, the camcorder turns off automatically. This prevents wearing down the battery and wearing out the video cartridge. → Slide the POWER switch to turn on the camcorder. (p. 12) • The LR6 (size AA) batteries or the battery pack is dead / near the end. → Install new LR6 (size AA) batteries or a charged battery pack. (p. 8)
A vertical band appears when a subject such as lights or a candle flame is shot against a dark background.	• The contrast between the subject and background is too high. The camcorder is not malfunctioning. → Change locations.
A vertical band appears when shooting a very bright subject.	• The camcorder is not malfunctioning.
The tape does not move when a video control button is pressed.	• The tape has run out. → Rewind the tape. (p. 20) • The video cartridge is not installed. → Install the video cartridge. (p. 31)
No sound is heard when playing back a tape.	• The speaker is turned off. → Set the speaker switch to ON. (p. 20)
The power is not on.	• The LR6 (size AA) batteries or the battery pack is dead / not installed / near the end. → Install new LR6 (size AA) batteries or a charged battery pack. (p. 8) • The batteries are not inserted with the correct polarity. → Insert the batteries in the correct direction. (p. 8) • The power cord is not connected to a wall outlet. → Connect the power cord to a wall outlet. (p. 10)

Symptom	Cause and/or Corrective Actions
The LR6 (size AA) batteries or the battery pack is quickly discharged.	• The ambient temperature is too low. (p. 27) • The battery pack has not been charged fully. → Charge the battery pack again. (p. 11) • The LR6 (size AA) batteries or the battery pack is completely dead, and the battery pack cannot be recharged. → Use new LR6 (size AA) batteries or another battery pack. (p. 27)
The date or time indicator displays bars (--:--:--).	• Reset the date and time. (p. 25)
The beep sounds for 5 seconds.	• Some trouble occurred in your camcorder. → Turn off the camcorder once, and then turn on the camcorder again. → Change the power source.
Acoustic feedback (howling) occurs.	• The camcorder is placed near the TV. → Move the camcorder away from the TV. → Turn down the volume of the TV.

Warning indicators

If indicators flash on the LCD screen, check the following:
♪♪... : you can hear the beep sound.



1 **The battery is weak or dead.**
Slow flashing: The battery is weak.
Fast flashing: The battery is dead.

2 **The tape is near the end.**
The flashing is slow.

3 **The tape has run out.**
The flashing becomes rapid.

4 **No video cartridge has been inserted.**

5 **The tab on the video cartridge is out (red).**

6 **The self-diagnosis function works .**
This function displays the camcorder's condition with five digits on the LCD screen. The five-digit display informs you of the camcorder's current condition. (p. 35)
If the display does not disappear, contact local authorized Sony service facility.

7 **Some other trouble has occurred.**
Turn off the camcorder and remove the LR6 (size AA) batteries or the battery pack once. Then install the LR6 (size AA) batteries or the battery pack and turn on the camcorder.
If the display does not disappear, contact local authorized Sony service facility.

Self-diagnosis display

The camcorder has a self-diagnosis display. This function displays the camcorder's condition with five digits (a combination of a letter and figures) on the LCD screen. If this occurs, check the following code chart. The five-digit display informs you of the camcorder's current condition. The last two digits (indicated by □□) will differ depending on the state of the camcorder.

LCD screen

Self-diagnosis display
•C:□□:□□
You can service the camcorder yourself.
•E:□□:□□
Contact local authorized Sony facility.

Five-digit display	Cause and/or Corrective Actions
C:31:□□ C:32:□□	• A serviceable situation not malfunctioned above has occurred. → Turn off the camcorder once and turn it on again, then operate the camcorder. → Change the power source, then operate the camcorder. → Leave the camcorder for about 1 hour, then operate the camcorder.
E:61:□□ E:62:□□	• A camcorder malfunction which you cannot correct has occurred. → Contact your local authorized Sony service facility and inform them of the five digits. (example: E:61:10)

If you are unable to resolve the problem, contact local authorized Sony service facility.

Using your camcorder abroad

Each country or area has its own electric and TV color systems. Before using your camcorder abroad, check the following points.

Power sources

You can use your camcorder in any country or area with the supplied two LR6 (size AA) batteries, battery pack or AC power adaptor within 100 V to 240 V AC, 50/60 Hz.

Different color systems

This camcorder is an PAL system based camcorder. If you want to view the playback picture on a TV, it must be an PAL system based TV.
Check the following list.

PAL system
Australia, Austria, Belgium, China, Czech Republic, Denmark, Finland, Germany, Great Britain, Holland, Hong Kong, Italy, Kuwait, Malaysia, New Zealand, Norway, Portugal, Singapore, Slovak Republic, Spain, Sweden, Switzerland, Thailand, etc.

PAL-M system
Brazil

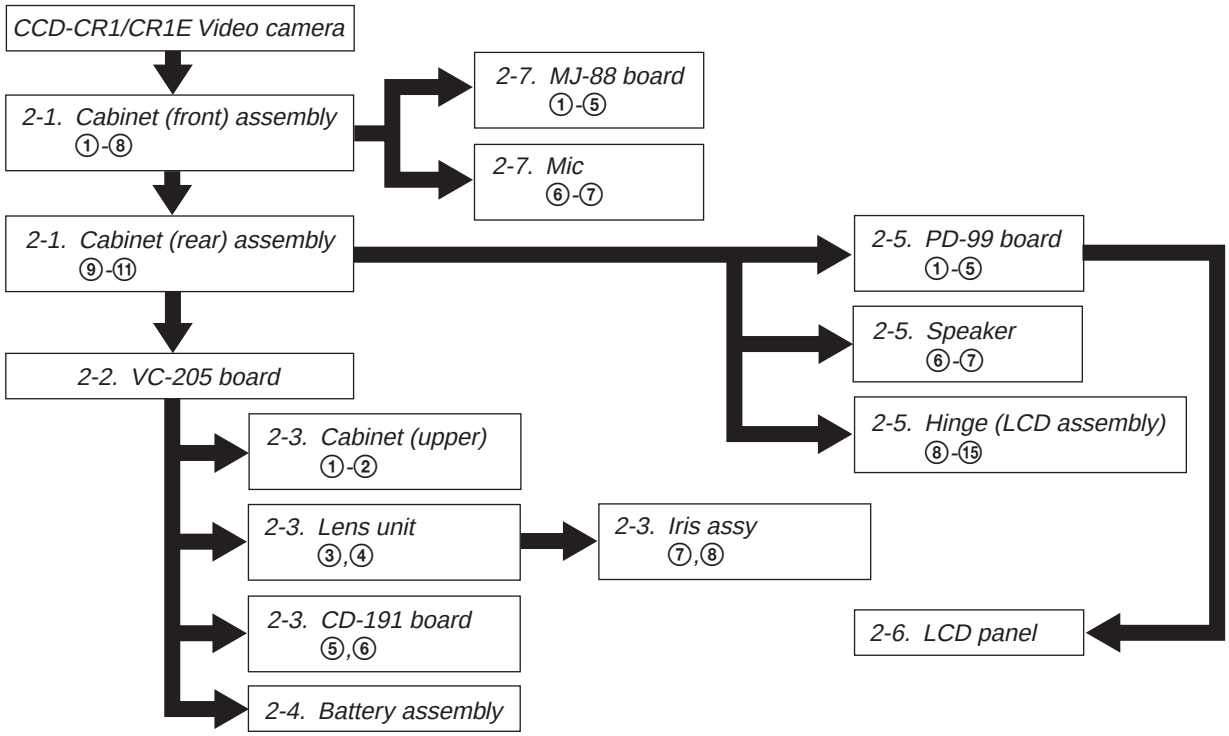
PAL-N system
Argentina, Paraguay, Uruguay

NTSC system
Bahama Islands, Bolivia, Canada, Central America, Chile, Colombia, Ecuador, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U.S.A., Venezuela, etc.

SECAM system
Bulgaria, France, Guyana, Hungary, Iran, Iraq, Monaco, Poland, Russia, Ukraine, etc.

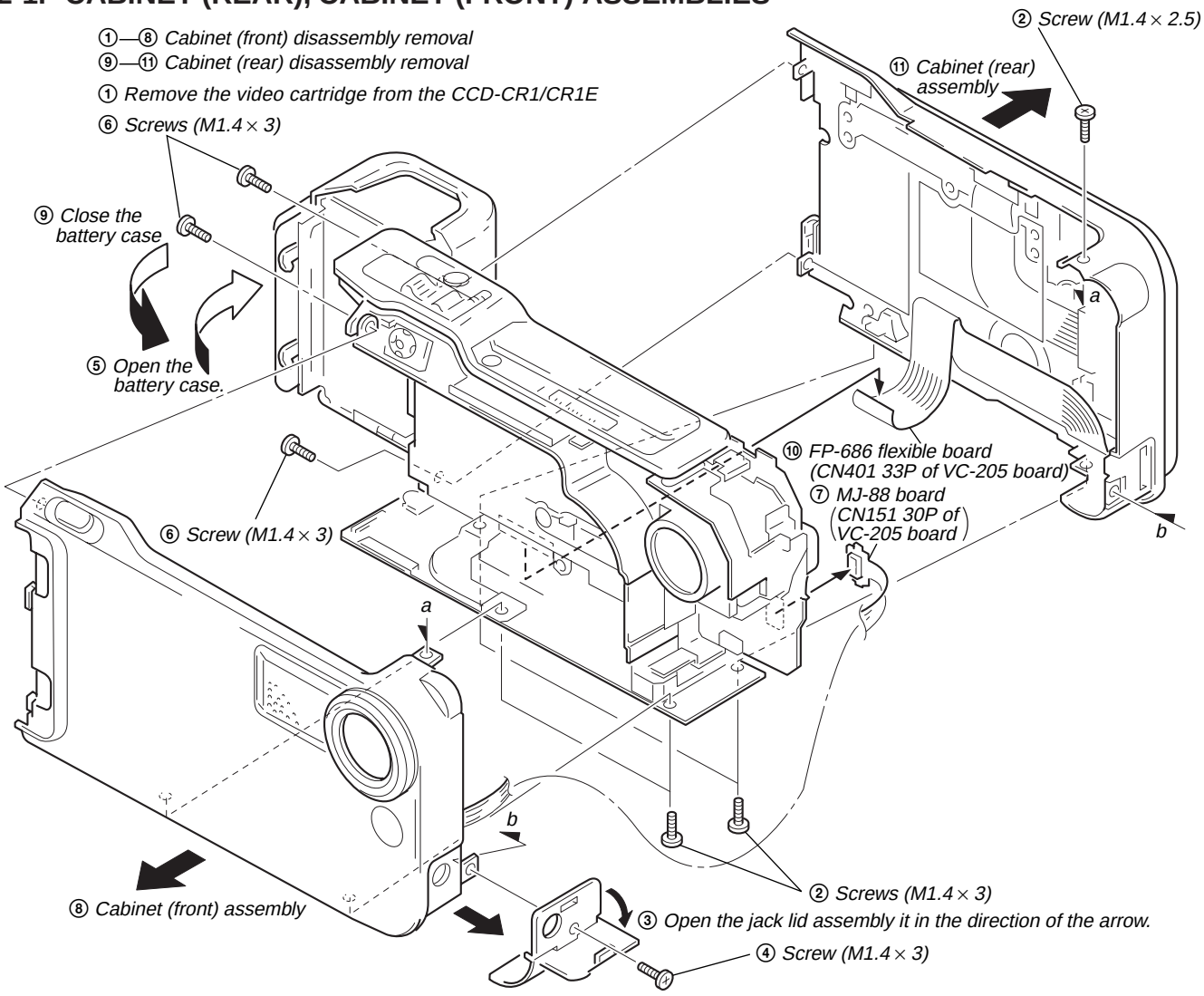
SECTION 2
DISASSEMBLY

The following flow chart shows the disassembly procedure.

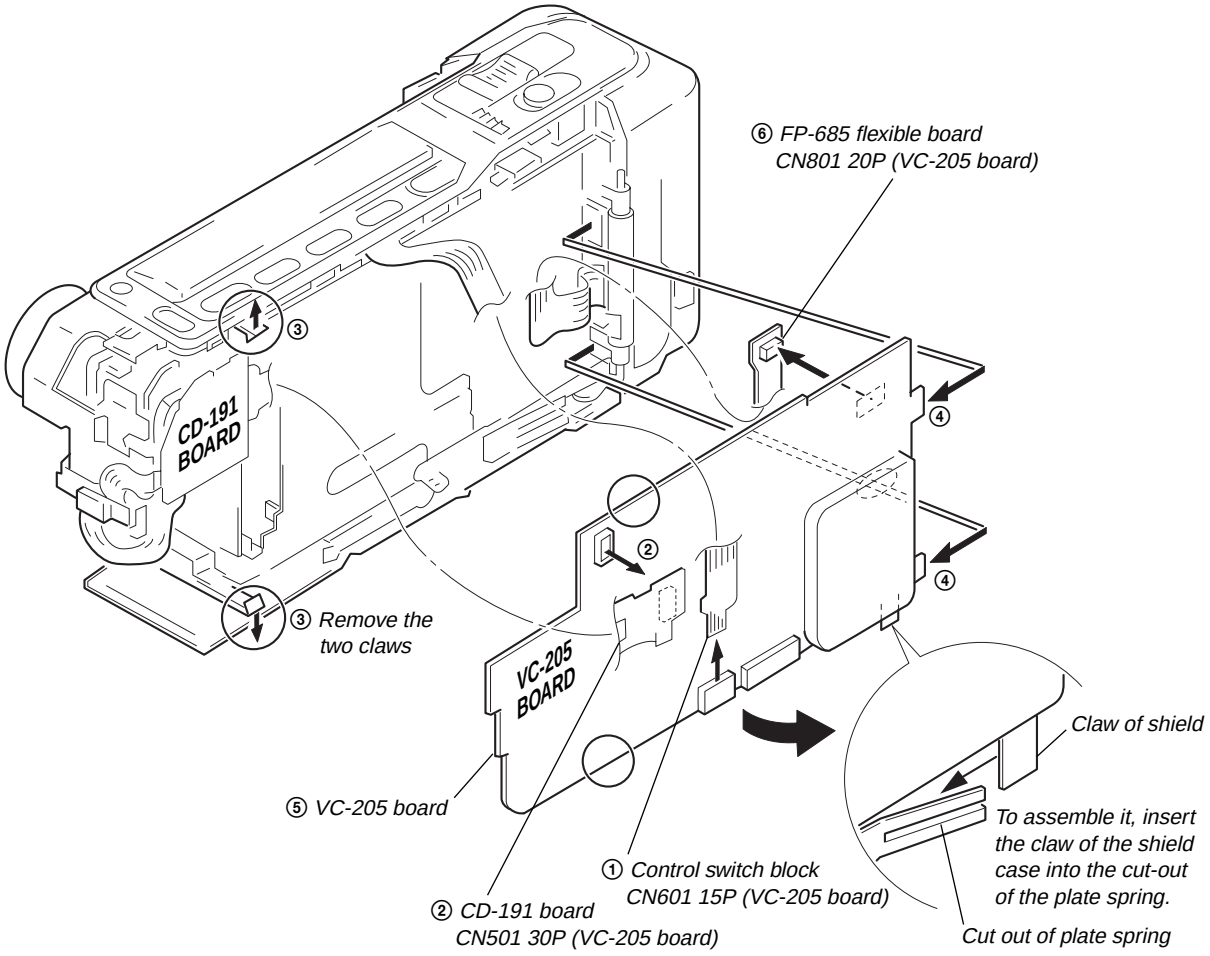


NOTE: Follow the disassembly procedure in the numerical order given.

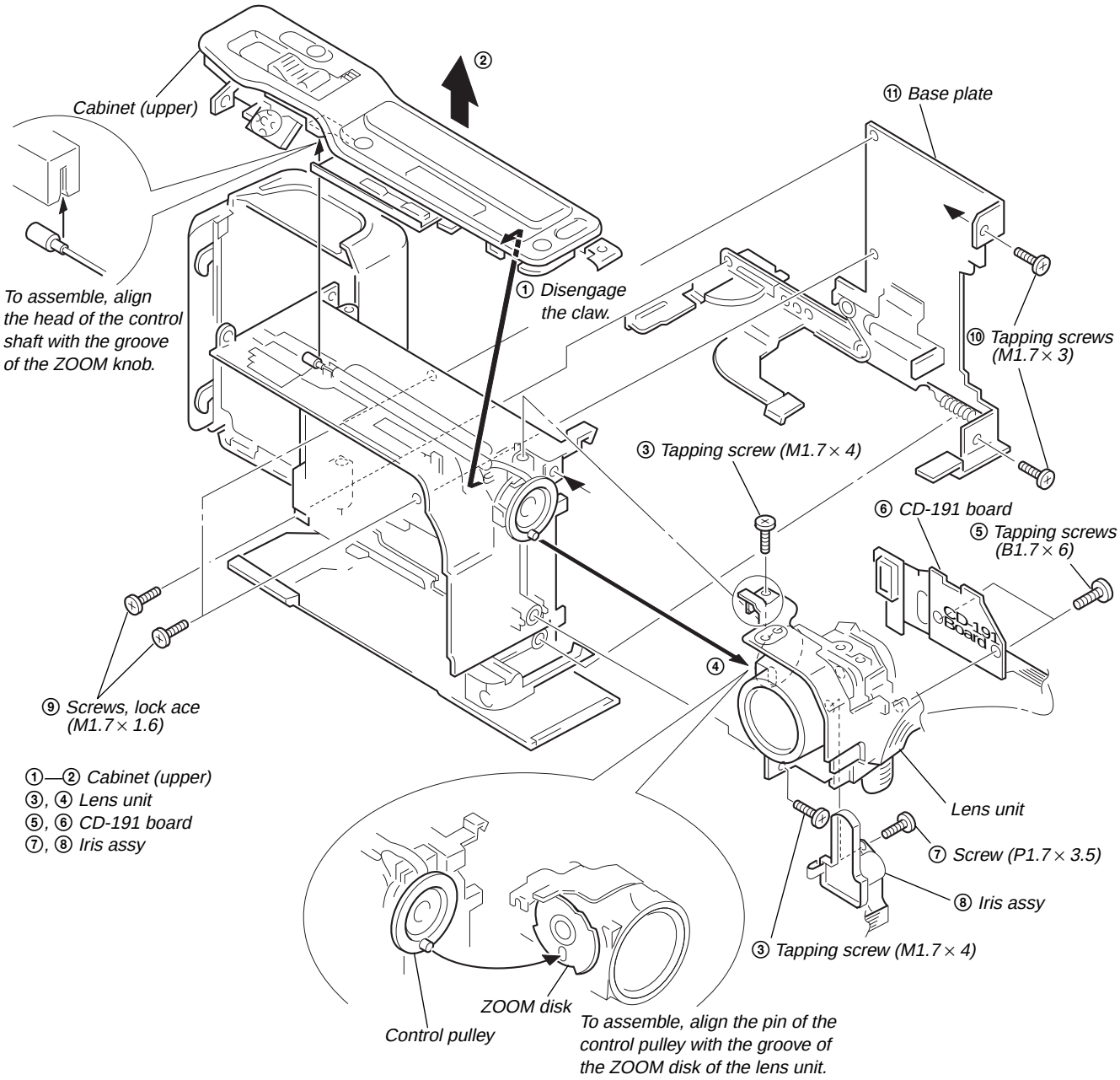
2-1. CABINET (REAR), CABINET (FRONT) ASSEMBLIES


①—⑧ Cabinet (front) disassembly removal
⑨—⑪ Cabinet (rear) disassembly removal
① Remove the video cartridge from the CCD-CR1/CR1E
⑥ Screws (M1.4 × 3)
⑨ Close the battery case
⑤ Open the battery case.
⑥ Screw (M1.4 × 3)
⑧ Cabinet (front) assembly
② Screw (M1.4 × 2.5)
⑪ Cabinet (rear) assembly
⑩ FP-686 flexible board (CN401 33P of VC-205 board)
⑦ MJ-88 board (CN151 30P of VC-205 board)
② Screws (M1.4 × 3)
③ Open the jack lid assembly it in the direction of the arrow.
④ Screw (M1.4 × 3)
a
b

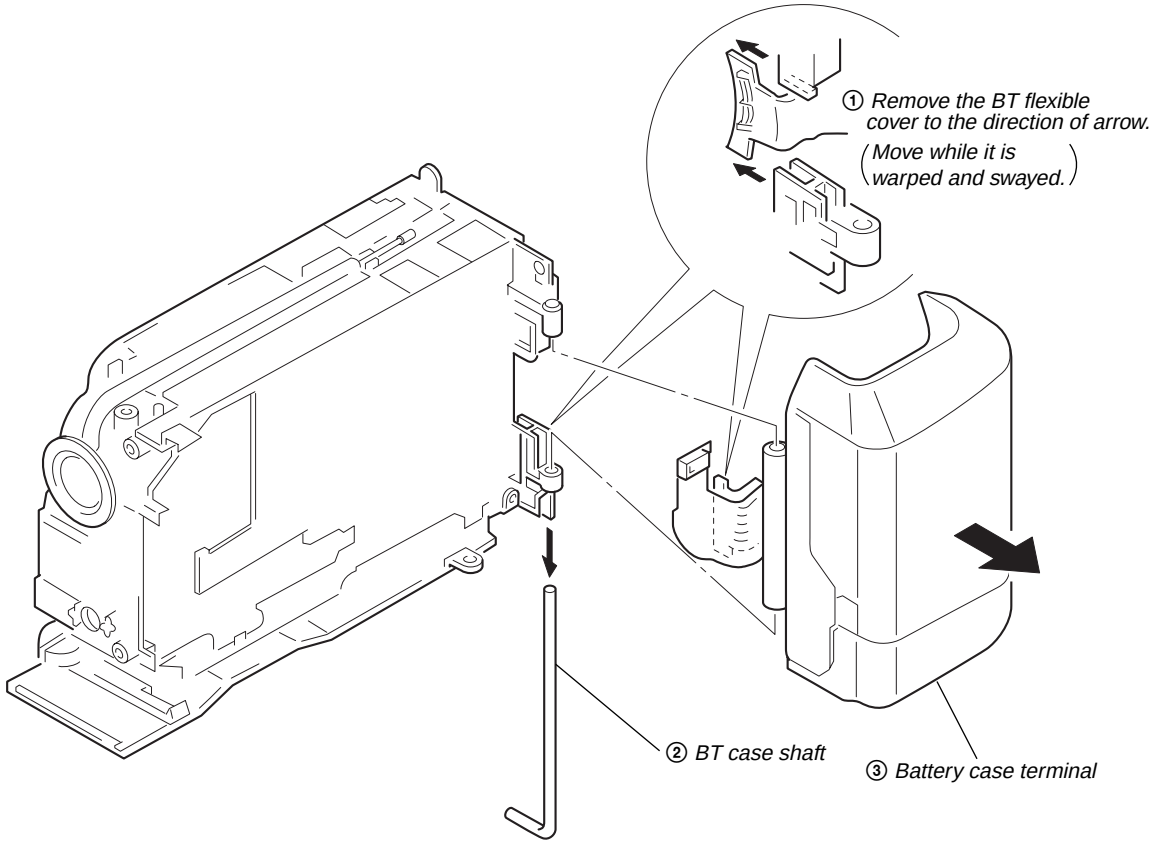
2-2. VC-205 BOARD



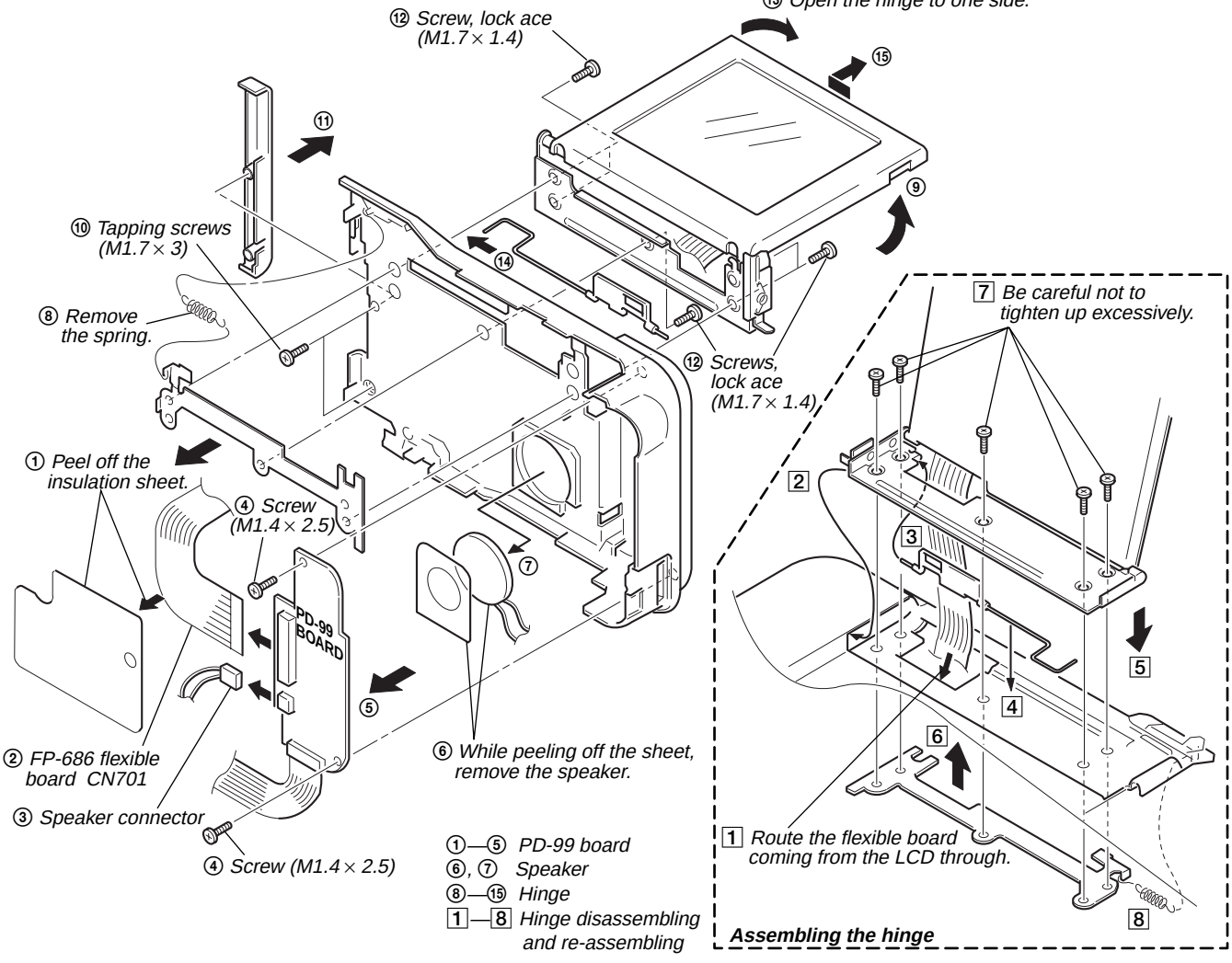
2-3. CABINET (UPPER), LENS UNIT, CD-191 BOARD


Cabinet (upper)
②
⑪ Base plate
To assemble, align the head of the control shaft with the groove of the ZOOM knob.
① Disengage the claw.
⑩ Tapping screws (M1.7× 3)
③ Tapping screw (M1.7× 4)
⑥ CD-191 board
⑤ Tapping screws (B1.7× 6)
④
⑨ Screws, lock ace (M1.7× 1.6)
①—② Cabinet (upper)
③, ④ Lens unit
⑤, ⑥ CD-191 board
⑦, ⑧ Iris assy
Lens unit
⑦ Screw (P1.7× 3.5)
⑧ Iris assy
③ Tapping screw (M1.7× 4)
ZOOM disk
Control pulley
To assemble, align the pin of the control pulley with the groove of the ZOOM disk of the lens unit.

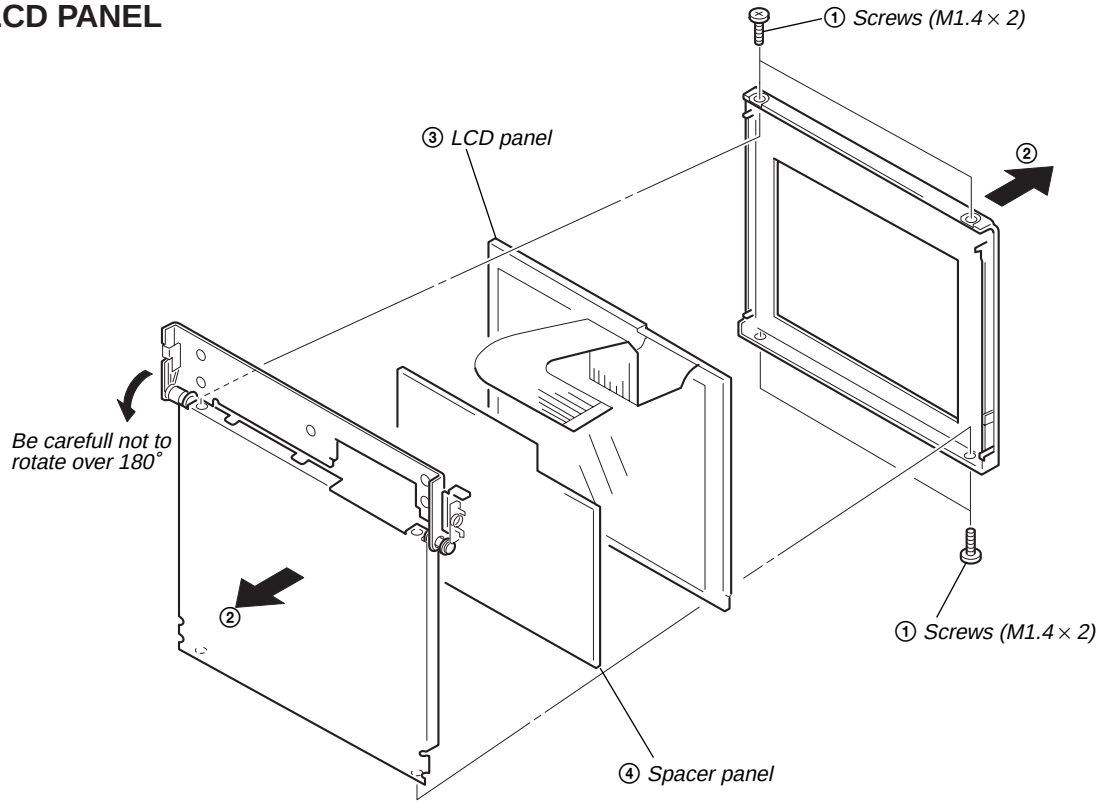
2-4. BATTERY CASE (BATTERY CASE, BATTERY LID ASSEMBLY)


① Remove the BT flexible cover to the direction of arrow.
(Move while it is warped and swayed.)
② BT case shaft
③ Battery case terminal

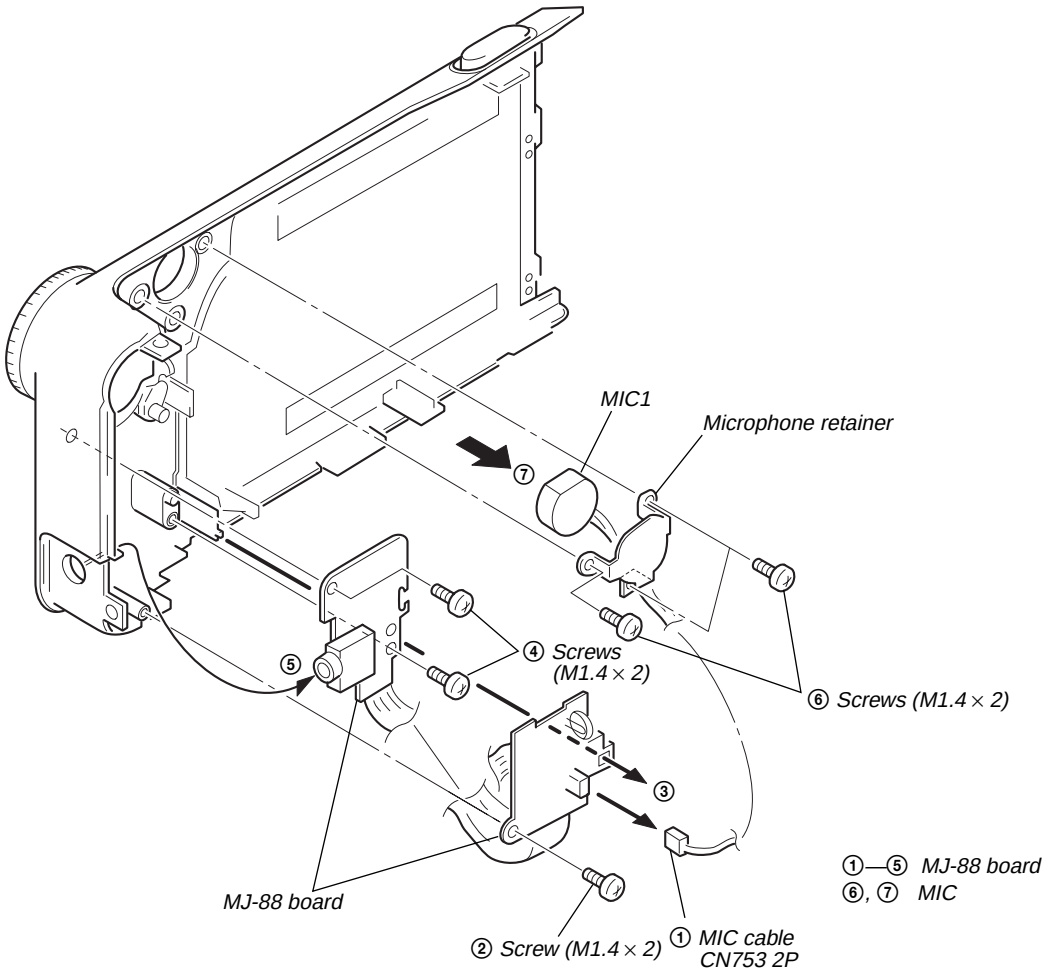
2-5. PD-99 BOARD, LCD PANEL ASSEMBLY



2-6. LCD PANEL

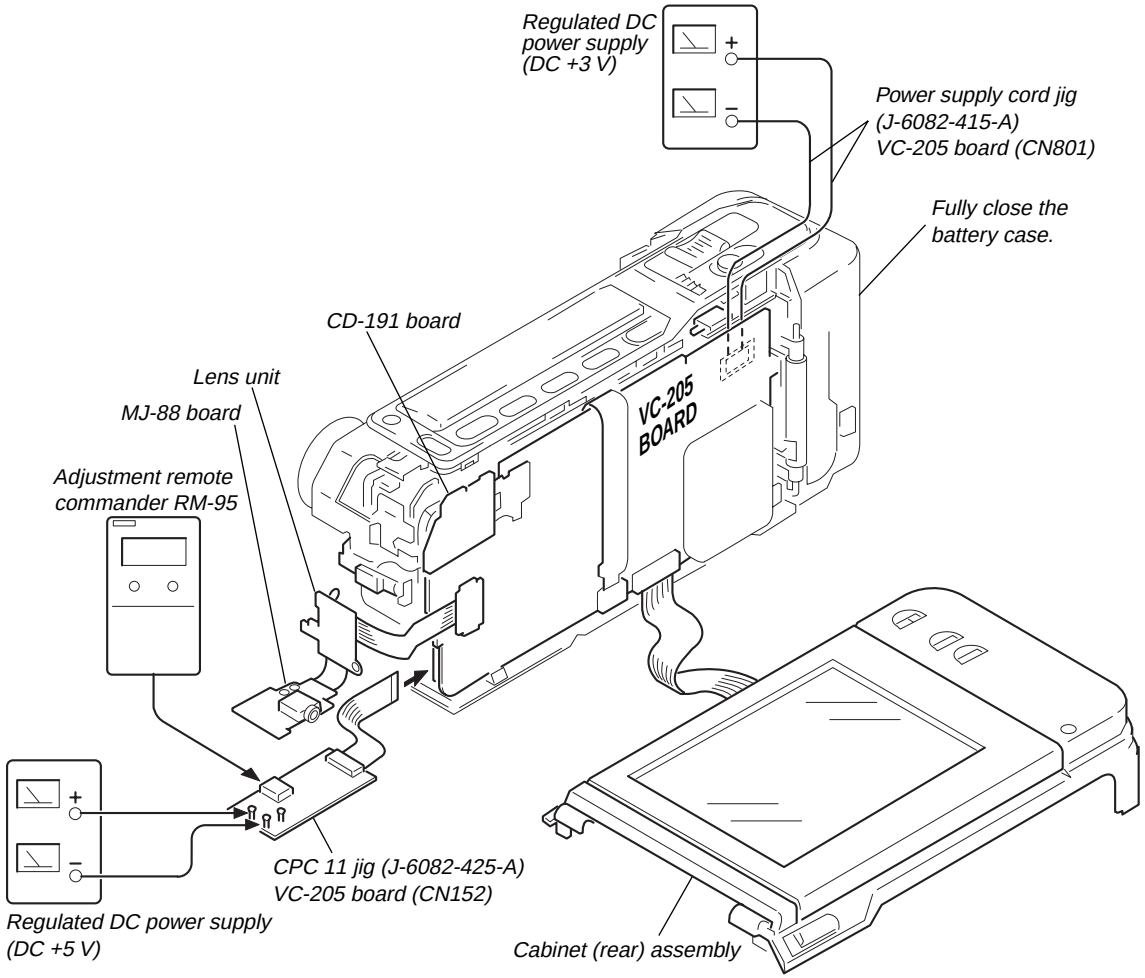


2-7. MJ-88 BOARD, MIC



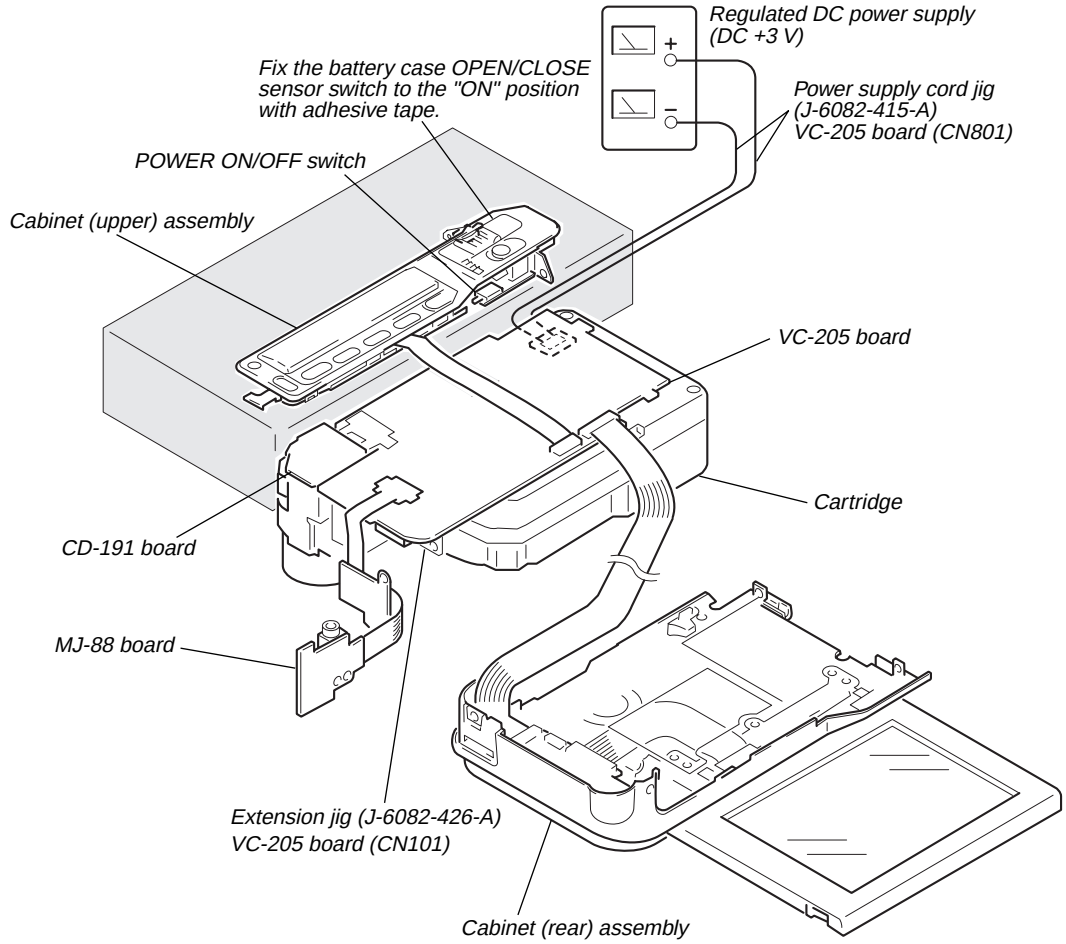
2-8. SERVICE POSITION-1 (Mainly for adjustment, check or voltage measurement-1)

Firstly, remove the following parts referring DISASSEMBLY (sections 2-1 and 2-7), and connect parts as shown below.

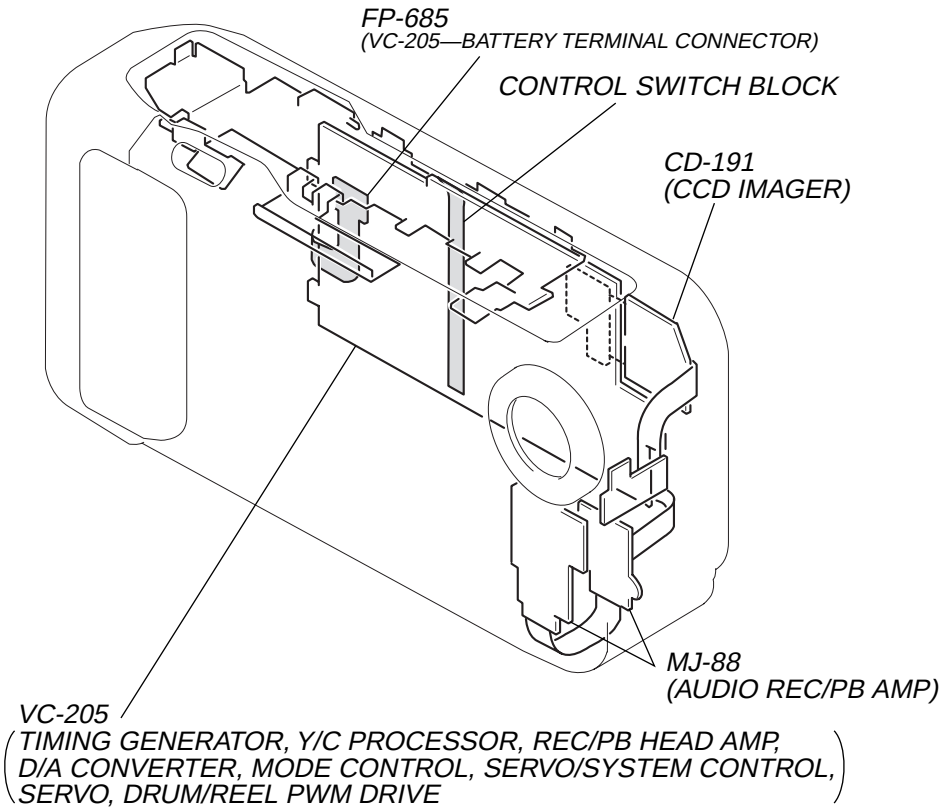


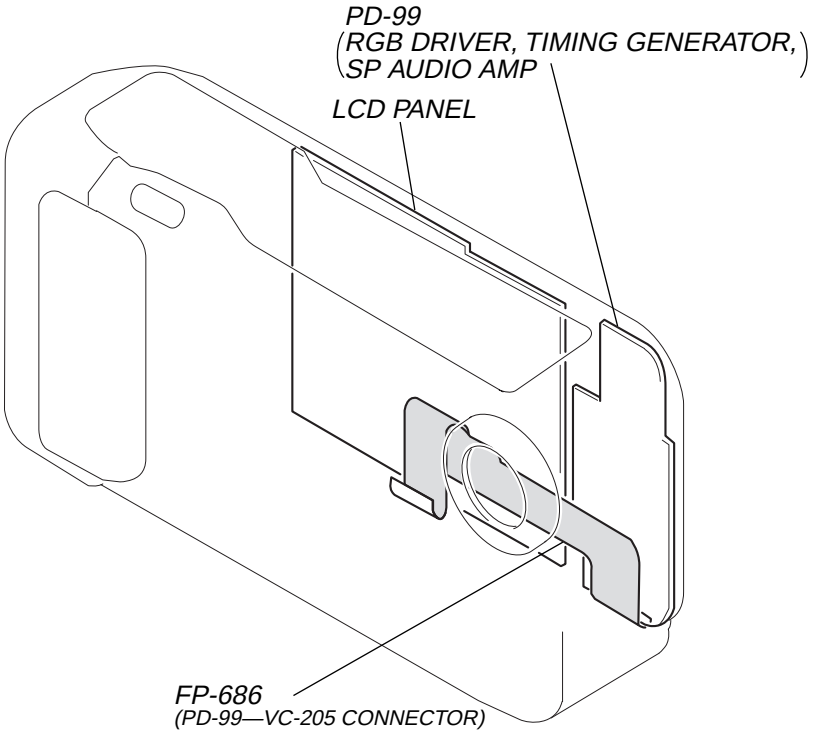
2-9. SERVICE POSITION-2 (For voltage measurement-2)

Firstly, remove the following parts referring DISASSEMBLY (sections 2-1, 2-2, 2-3, and 2-7), and connect parts as shown below.

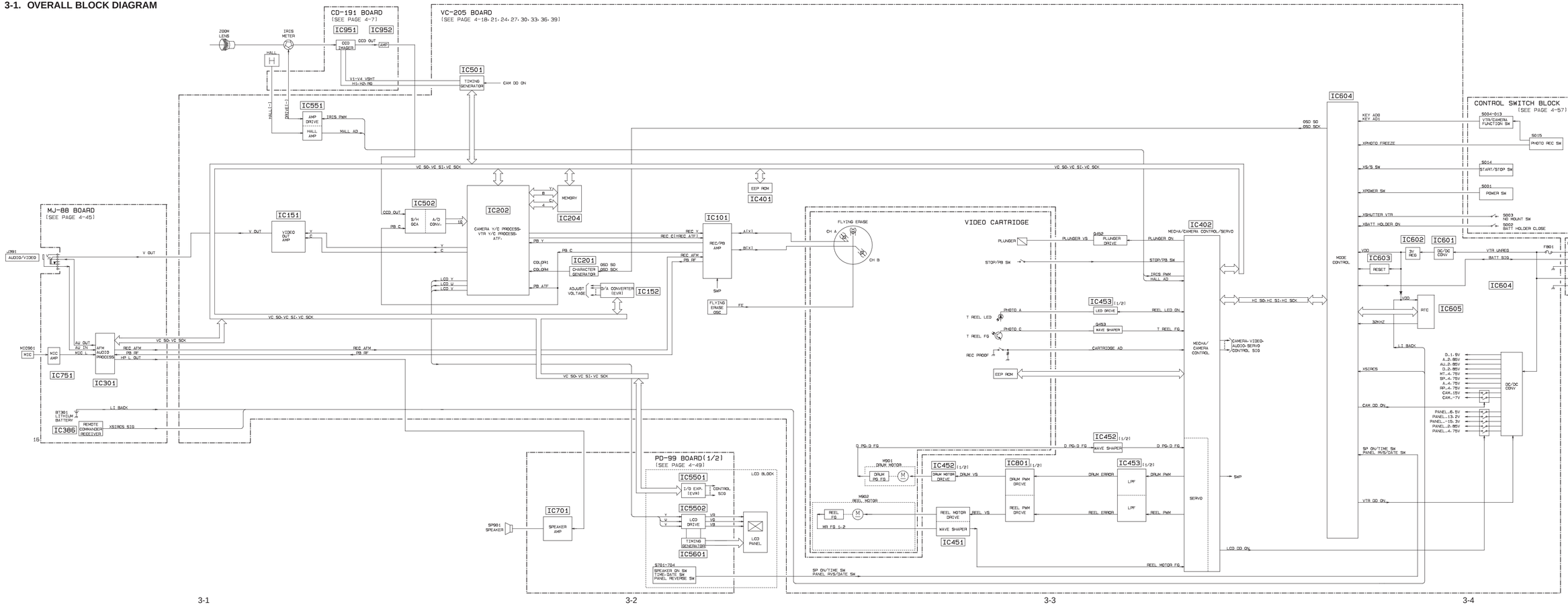


2-10. CIRCUIT BOARDS LOCATION

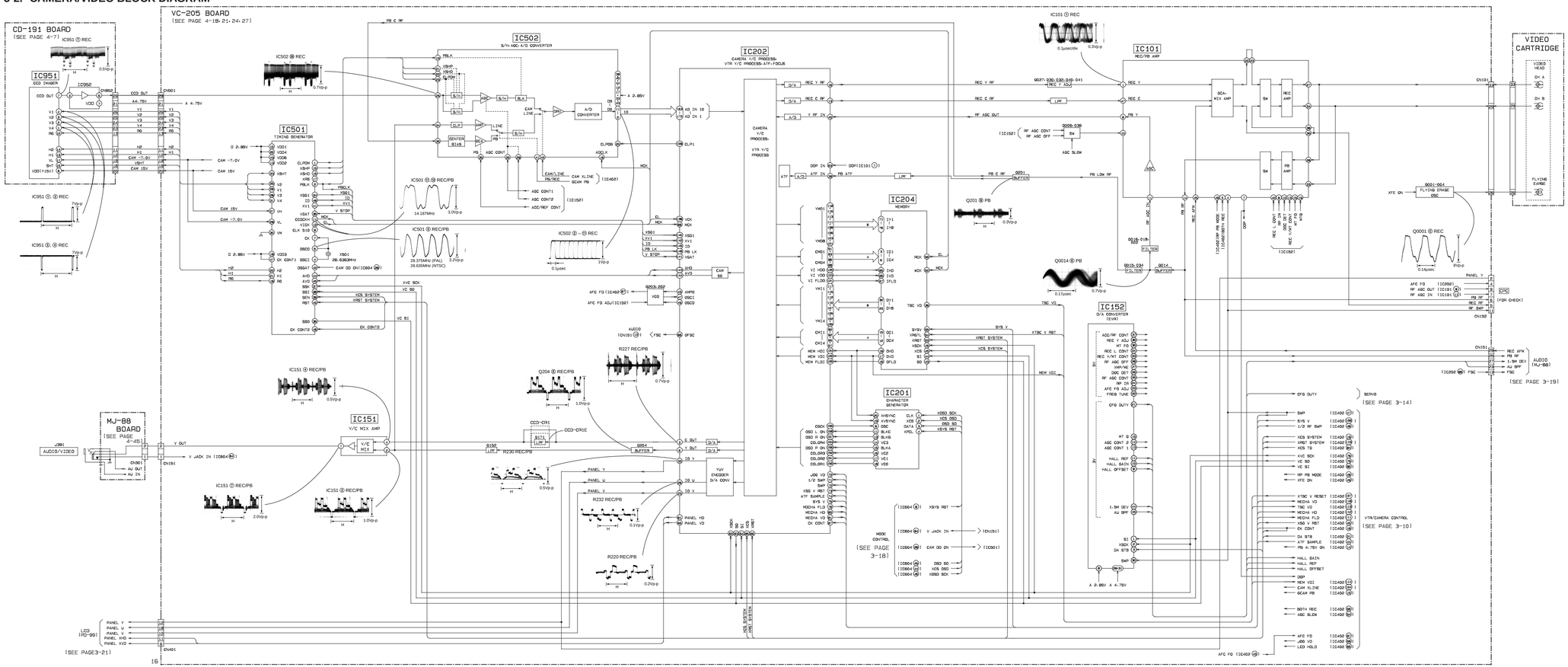




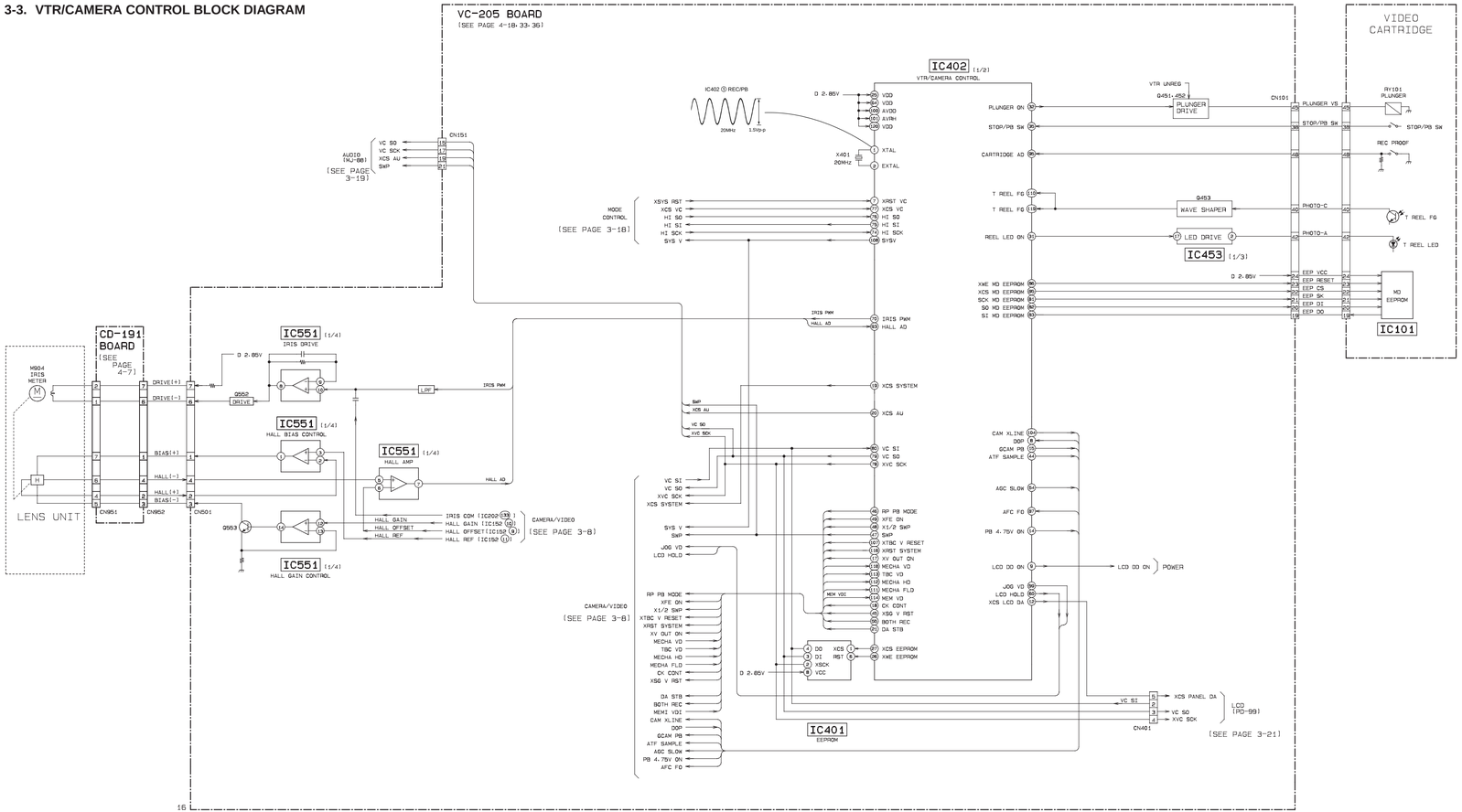
3-1. OVERALL BLOCK DIAGRAM



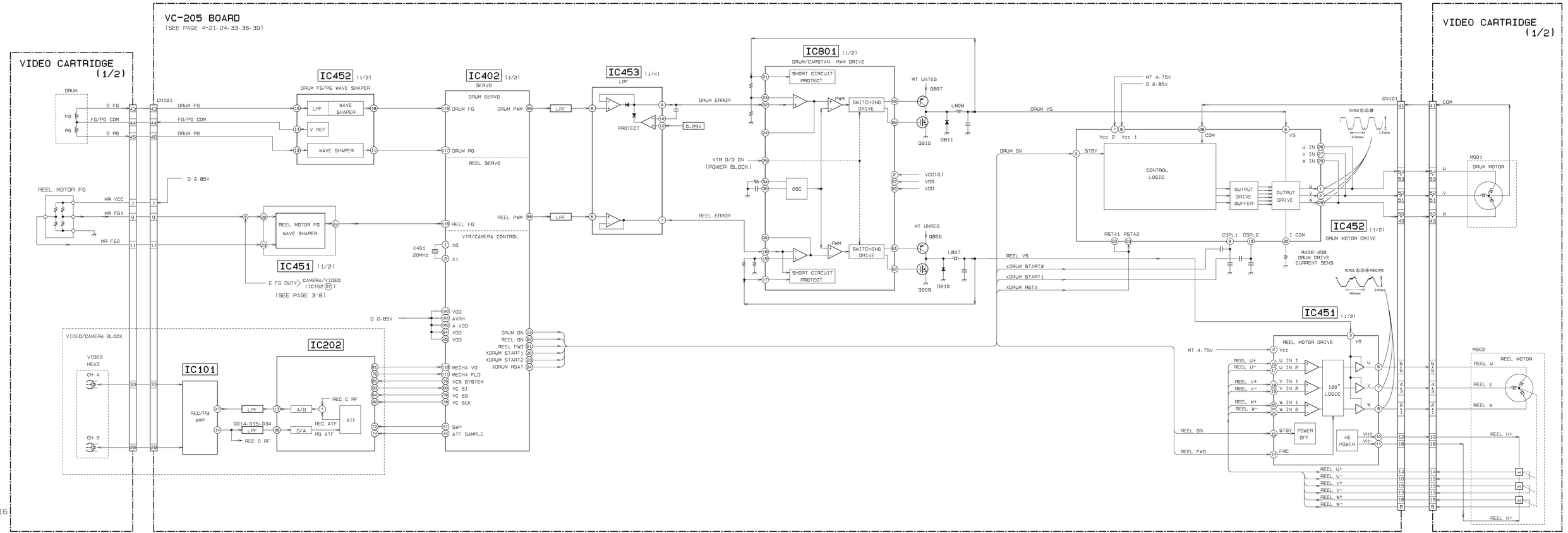
3-2. CAMERA/VIDEO BLOCK DIAGRAM



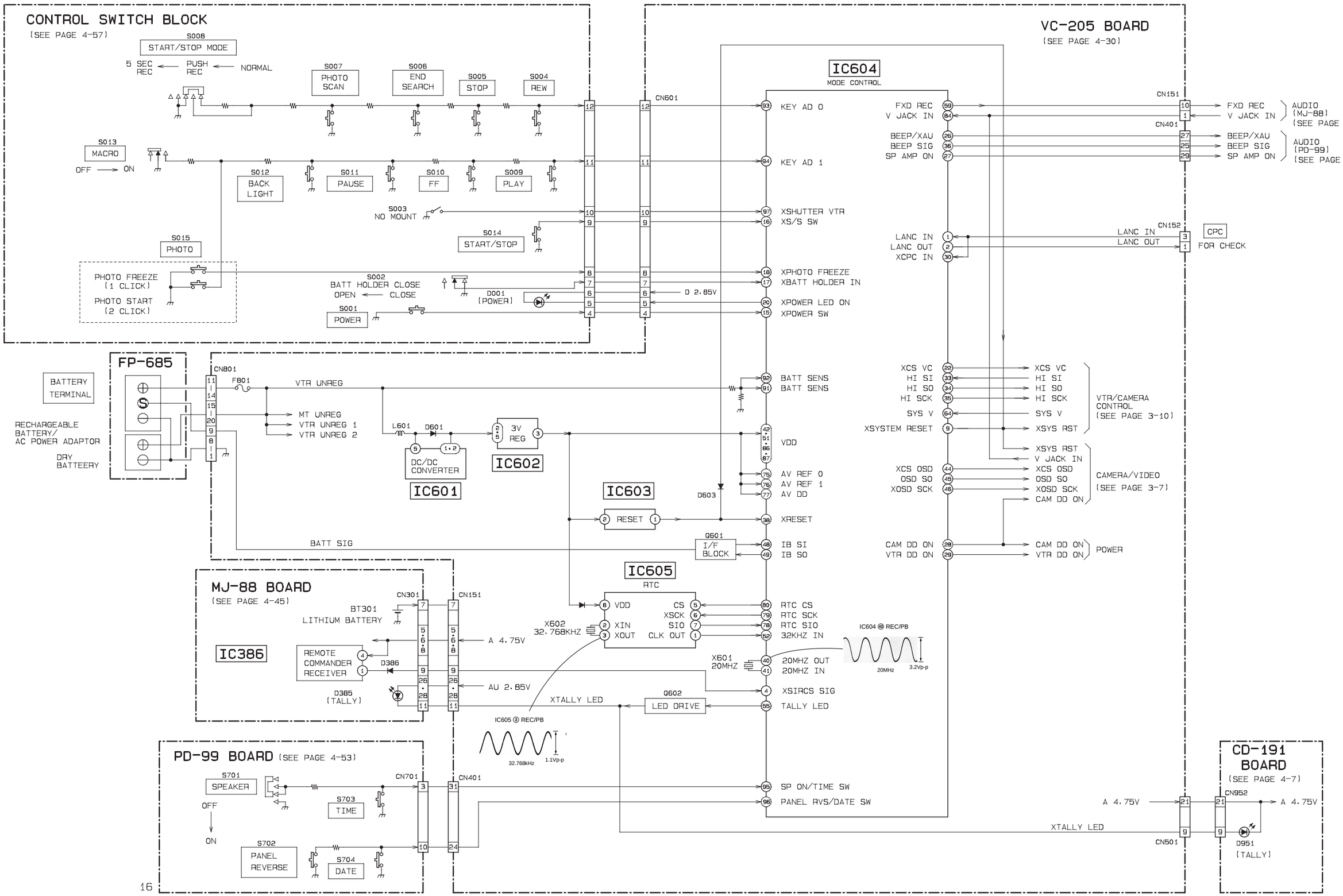
3-3. VTR/CAMERA CONTROL BLOCK DIAGRAM



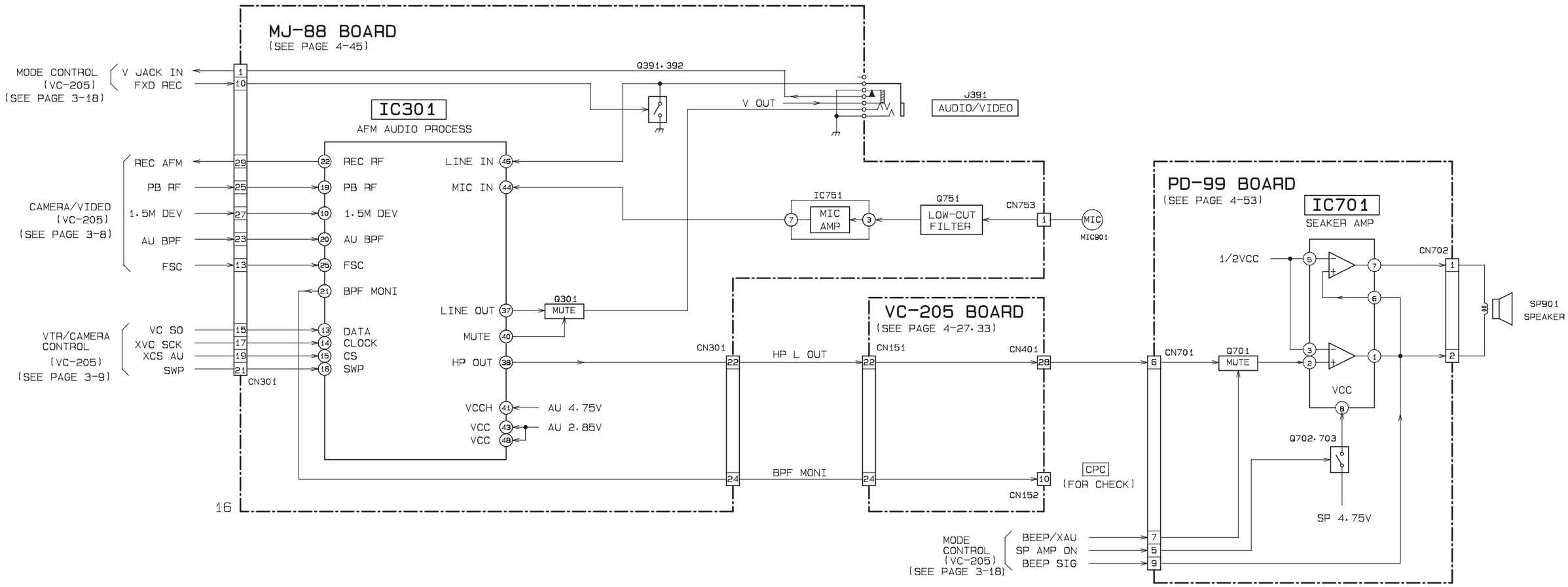
3-4. SERVO BLOCK DIAGRAM



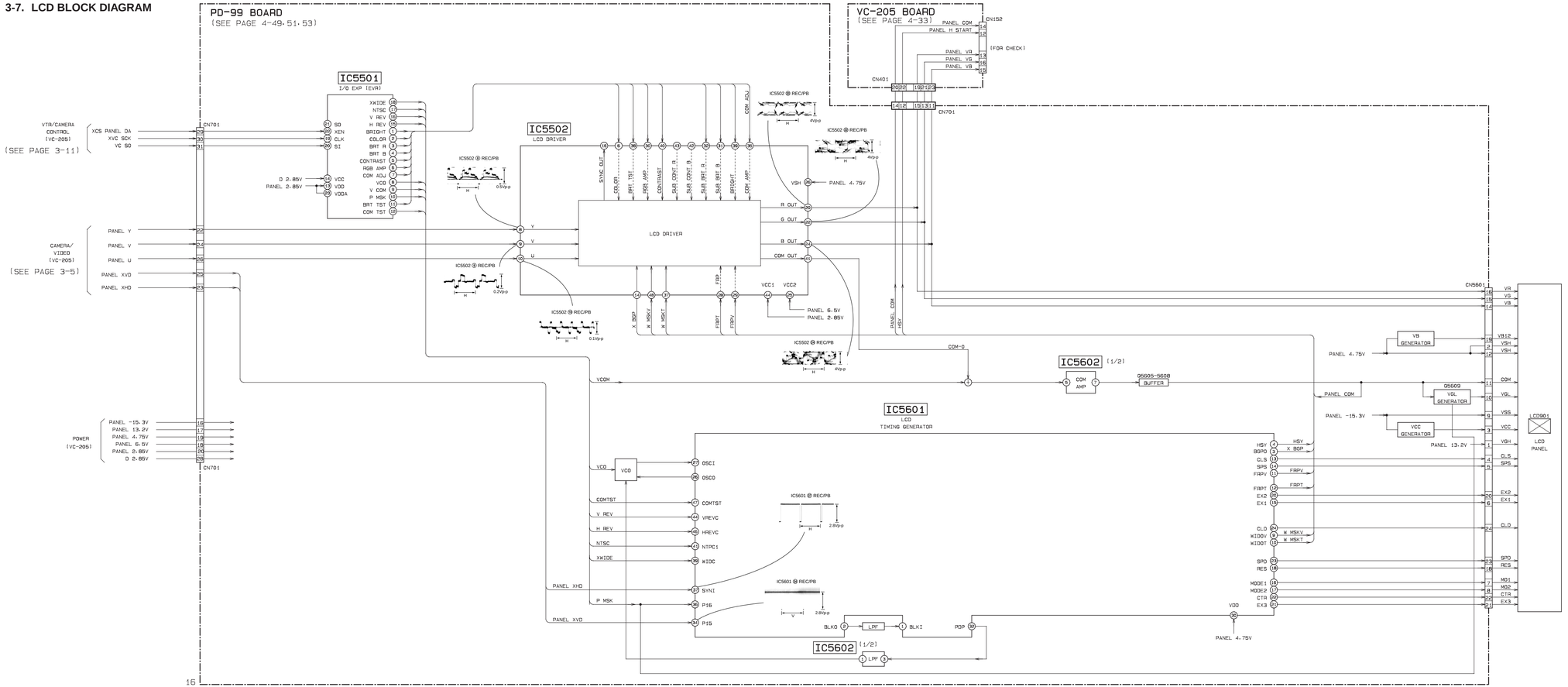
3-5. MODE CONTROL BLOCK DIAGRAM



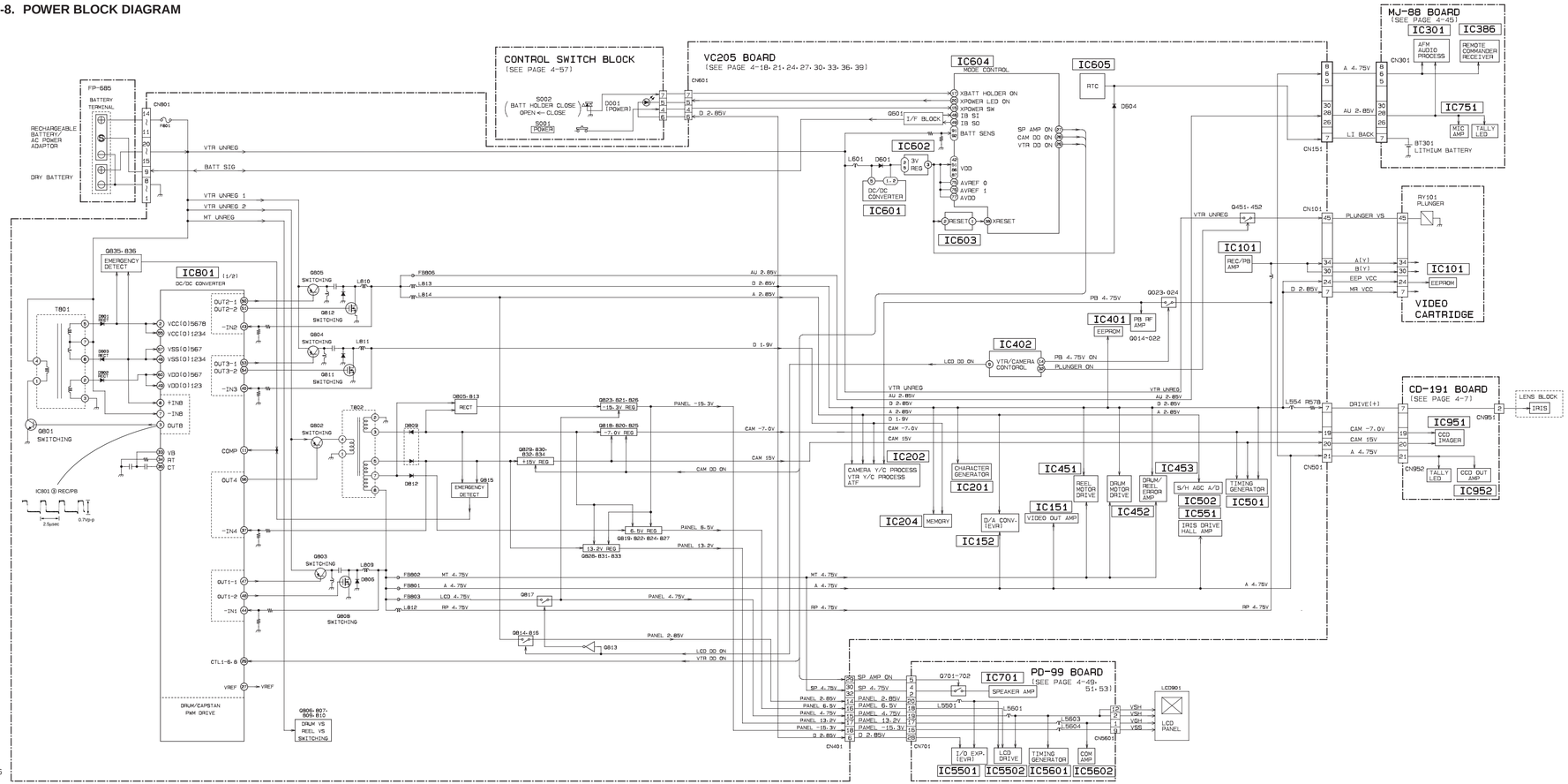
3-6. AUDIO BLOCK DIAGRAM



3-7. LCD BLOCK DIAGRAM

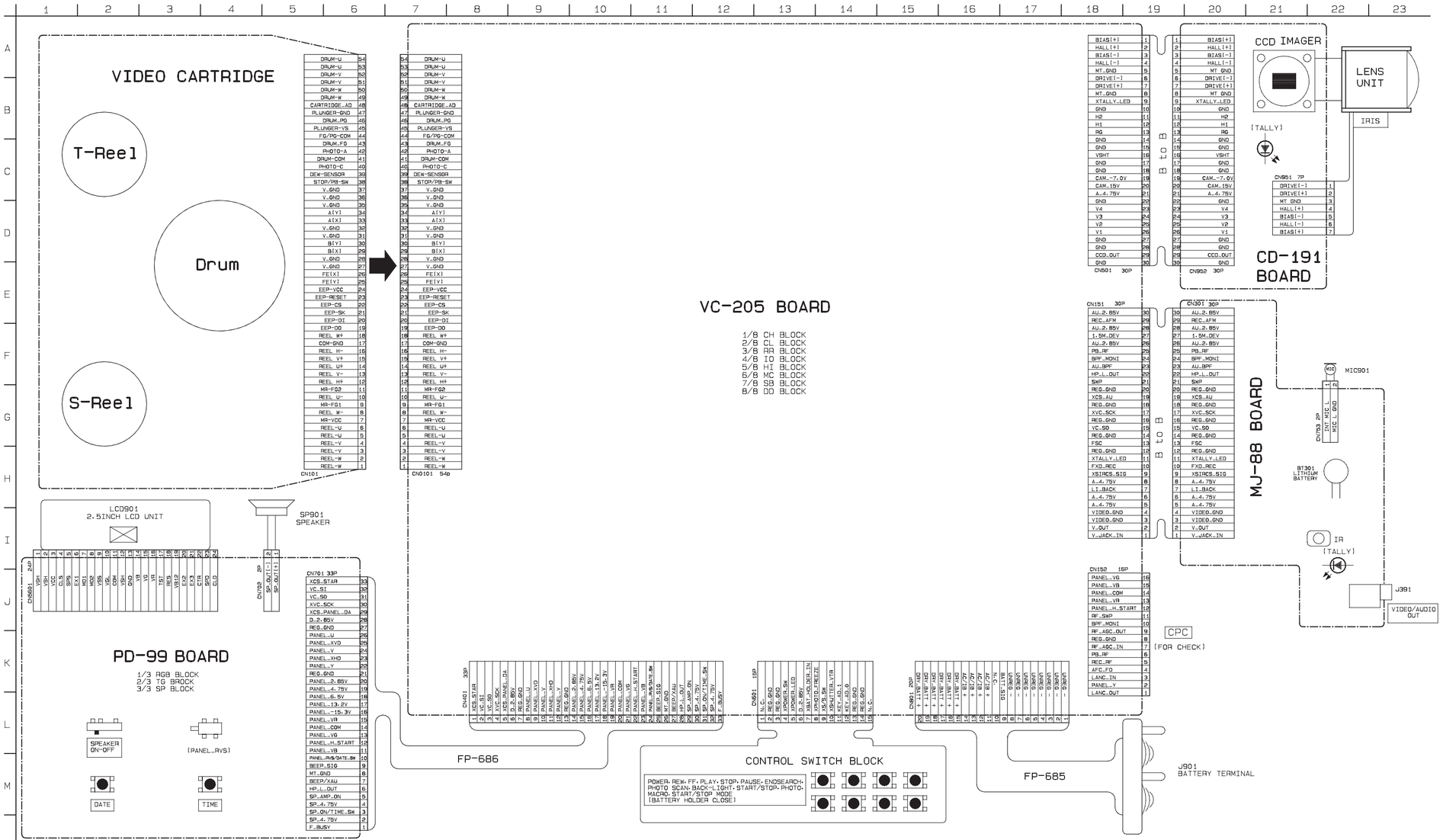


3-8. POWER BLOCK DIAGRAM



SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM

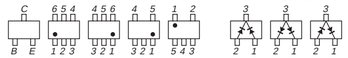


4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR WIRING BOARDS AND SCHEMATIC DIAGRAMS
(In addition to this, the necessary note is printed in each block)

(For printed wiring boards)
- ▒▒▒: Pattern from the side which enables seeing. (The other layers' patterns are not indicated.)
- Through hole is omitted.
- Circled numbers refer to waveforms.
- There are few cases that the part printed on diagram isn't mounted in this model.
- Chip parts.

Transistor / Diode



(For schematic diagrams)
- All capacitors are in mF unless otherwise noted. pF : m mF. 50V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10W unless otherwise noted. kW=1000W, MW=1000kW.
- Caution when replacing chip parts. New parts must be attached after removal of chip. Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.

Example: C541 22U TA A; L452 10UH 2520

Kinds of capacitor
Temperature characteristics
External dimensions (mm)

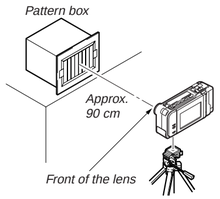
- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used. In such cases, the unused circuits may be indicated.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name XEDIT → EDIT PB/XREC → PB/REC
- : non flammable resistor
- : fusible resistor
- : panel designation
- : B+ Line
- : B– Line
- : IN/OUT direction of (+,–) B LINE.
- : adjustment for repair.
- Circled numbers refer to waveforms.

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, pleas include the board name.

(Measuring conditions voltage and waveform)
- Voltages and waveforms are measured between the measurement points and ground when camera shoots color bar chart of pattern box. They are reference values and reference waveforms. (VOM of DC 10 MW input impedance is used.).
- Voltage values change depending upon input impedance of VOM used.)

1. Connection



2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

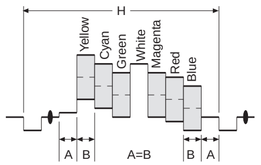


Fig. a (Video output terminal output waveform)

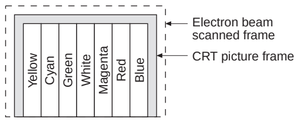
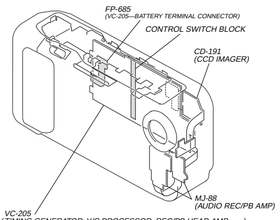


Fig.b (Picture on monitor TV)



For printed wiring board
- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.

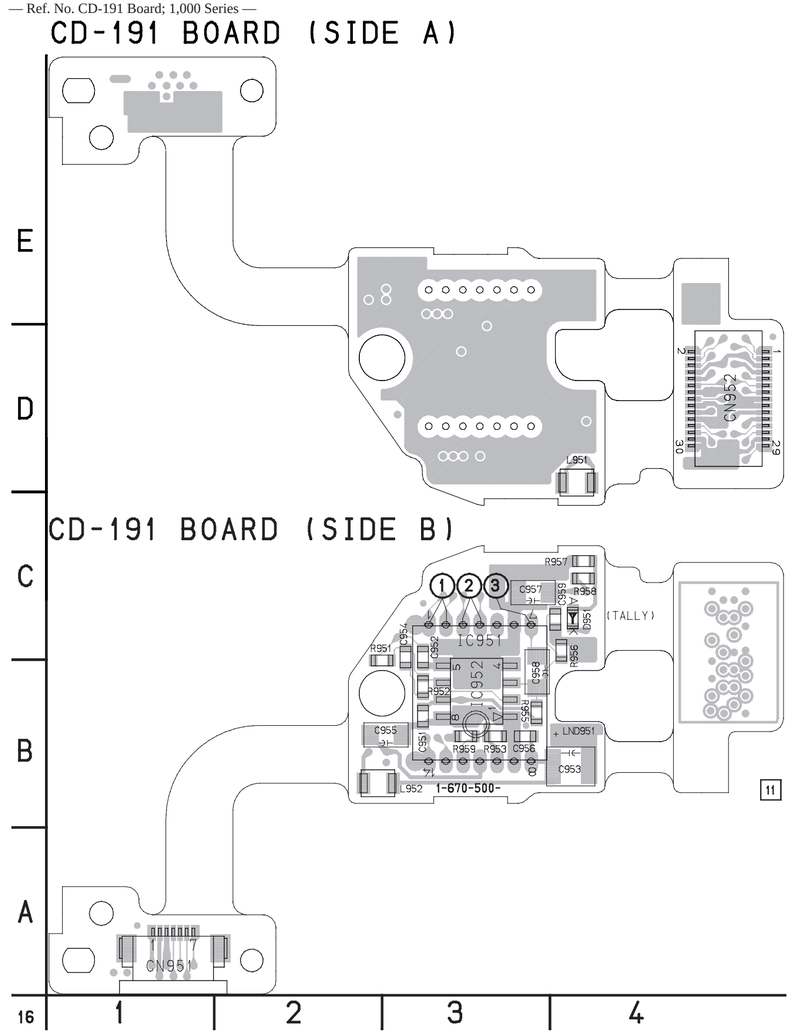
There are few cases that the part printed on this diagram isn't mounted in this model.

Precautions Upon Replacing CCD Imager
- The CD-191 board mounted as a repair part is not equipped with a CCD imager. When replacing this board, remove the CCD imager from the old one and mount it onto the new one.
- If the CCD imager has been replaced, carry out all the adjustments for the camera section.
- As the CCD imager may be damaged by static electricity from its structure, handle it carefully like for the MOS IC. In addition, ensure that the receiver is not covered with dusts nor exposed to strong light.

CD-191 BOARD

C951	B-3
C952	C-3
C953	B-4
C954	C-3
C955	B-3
C956	B-3
C957	C-3
C958	B-3
C959	C-4
CN951	A-1
CN952	D-4
D951	C-4
IC951	B-3
IC952	B-3
L951	D-4
L952	B-2
R951	B-3
R952	B-3
R953	B-3
R955	B-3
R956	C-4
R957	C-4
R958	C-4
R959	B-3

CD-191 (CCD IMAGER) PRINTED WIRING BOARD
— Ref. No. CD-191 Board; 1,000 Series —

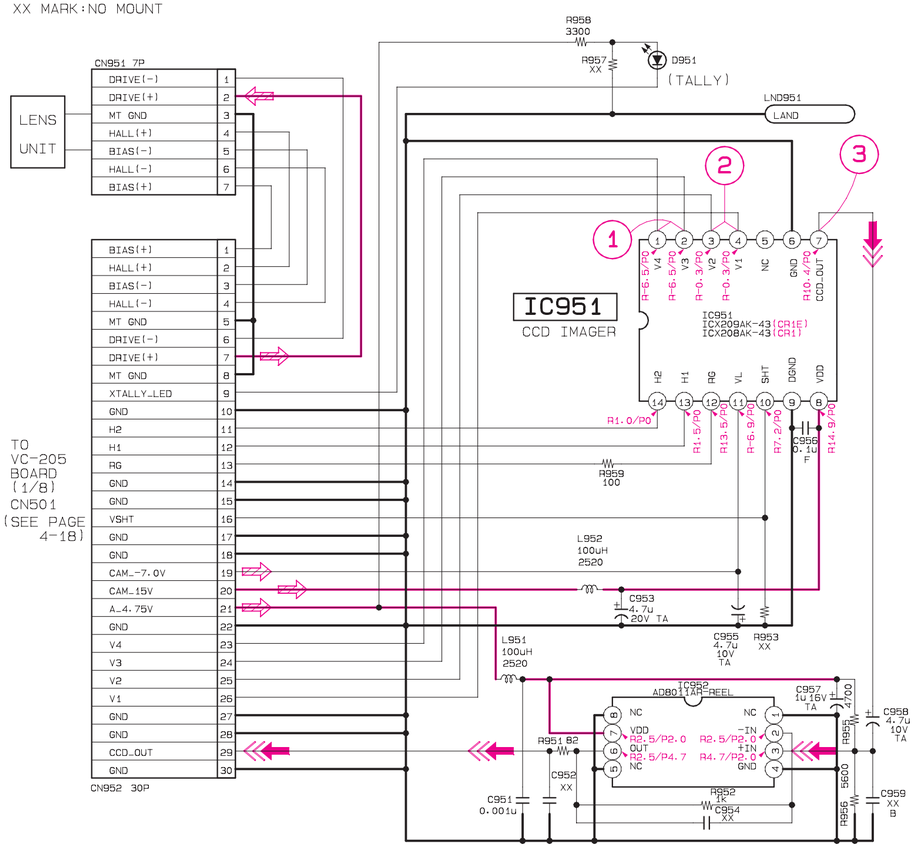


CD-191 BOARD

CCD IMAGER

-REF.NO.1000 SERIES-
XX MARK:NO MOUNT

NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE



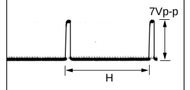
•SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC			➡
PB			

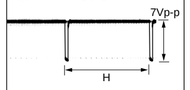
- The CCD imager is not supplied as the repair part. The lens block is supplied as the repair part.
- LENS UNIT is replaced as a block so that these SCHEMATIC DIAGRAM and PRINTED WIRING BOARD are omitted.

CD-191 BOARD

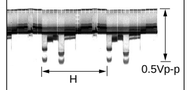
① IC951 ①, ② REC



② IC951 ③, ④ REC



③ IC951 ⑦ REC

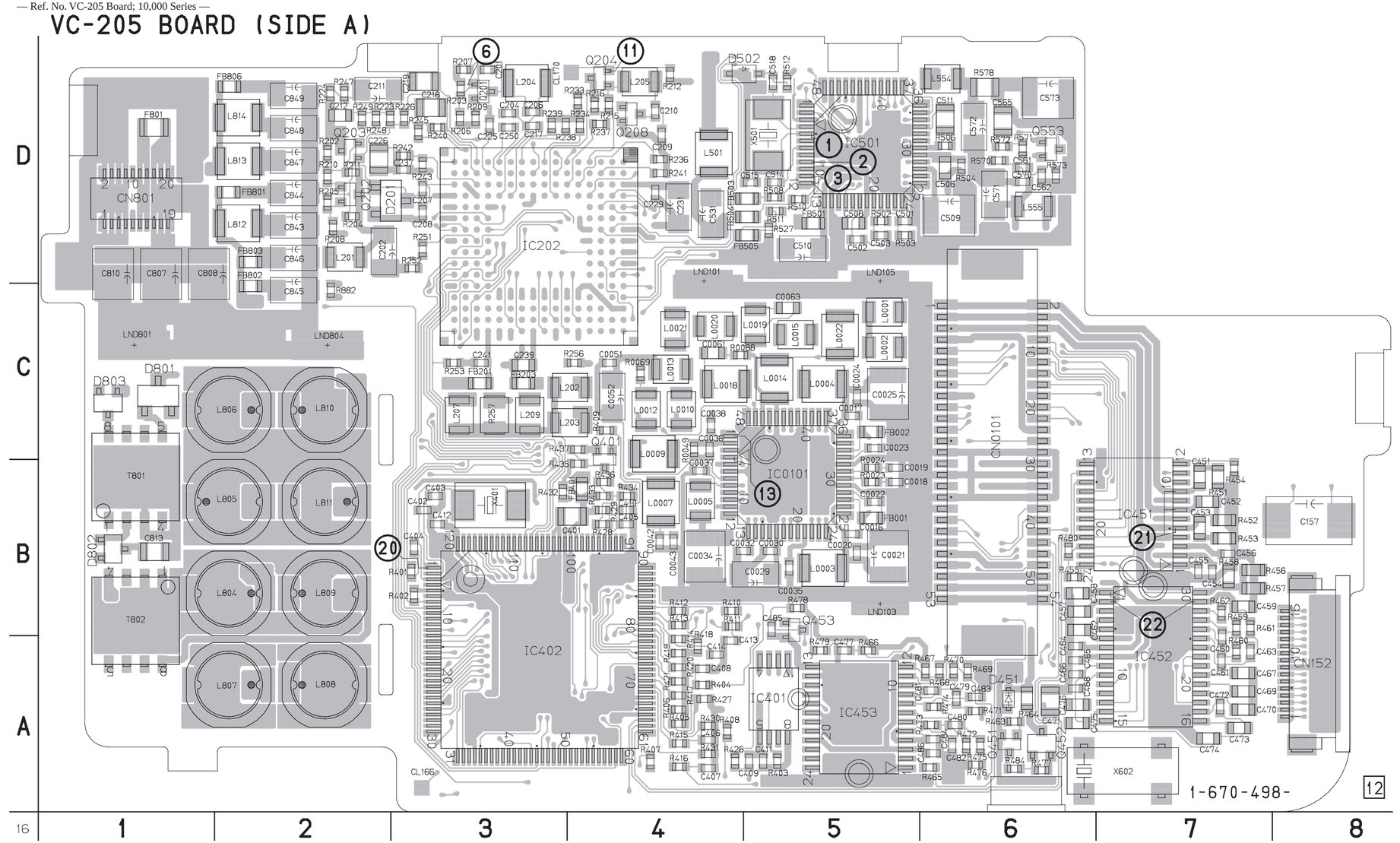


VC-205 (TIMING GENERATOR, Y/C PROCESSOR, REC/PB HEAD AMP, D/A CONVERTER, MODE CONTROL, SERVO/SYSTEM CONTROL, SERVO, DRUM/REEL PWM DRIVE) PRINTED WIRING BOARD

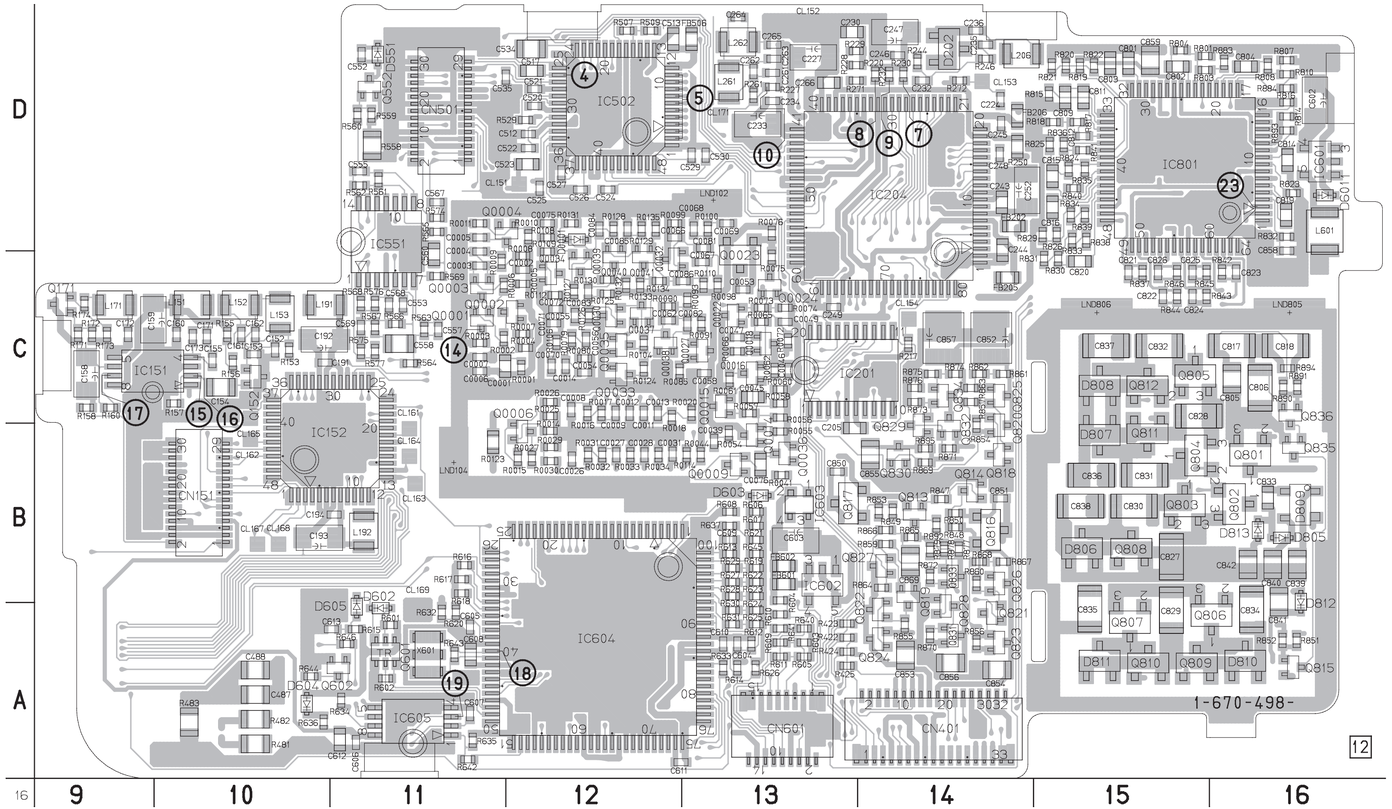
— Ref. No. VC-205 Board; 10,000 Series —

VC-205 BOARD (SIDE A)

C157	B-8	C565	D-6	L554	D-6	R409	C-4
C201	D-3	C570	D-6	L555	D-6	R410	B-4
C202	D-2	C571	D-6	L804	B-2	R411	B-4
C204	D-3	C572	D-6	L805	B-2	R412	B-4
C206	D-3	C573	D-6	L806	C-2	R413	B-4
C207	D-3	C807	D-1	L807	A-2	R414	A-4
C208	D-3	C808	D-1	L808	A-2	R415	A-4
C209	D-4	C810	D-1	L809	B-2	R416	A-4
C210	D-4	C813	B-1	L810	C-2	R417	A-4
C211	D-2	C843	D-2	L811	B-2	R418	A-4
C212	D-2	C844	D-2	L812	D-2	R419	A-4
C217	D-3	C845	C-2	L813	D-2	R420	A-4
C218	D-3	C846	D-2	L814	D-2	R421	A-4
C219	D-3	C847	D-2	L0001	C-5	R426	A-4
C225	D-3	C848	D-2	L0002	C-5	R427	A-4
C226	D-2	C849	D-2	L0003	B-5	R428	B-4
C229	D-4	C0016	B-5	L0004	C-5	R429	B-4
C231	D-4	C0017	C-5	L0005	B-4	R430	A-4
C237	D-3	C0018	B-5	L0007	B-4	R431	A-4
C239	C-3	C0019	B-5	L0009	C-4	R432	B-3
C241	C-3	C0020	B-5	L0010	C-4	R433	B-4
C250	D-3	C0021	B-5	L0012	C-4	R434	B-4
C401	B-4	C0022	B-5	L0013	C-4	R435	B-4
C402	B-3	C0023	C-5	L0014	C-5	R436	B-4
C403	B-3	C0024	C-5	L0015	C-5	R451	B-7
C404	B-3	C0025	C-5	L0018	C-4	R452	B-7
C405	B-4	C0029	B-5	L0019	C-5	R453	B-7
C406	A-4	C0030	B-5	L0020	C-4	R454	B-7
C407	A-4	C0032	B-5	L0021	C-4	R455	B-6
C408	A-4	C0034	B-4	L0022	C-5	R456	B-7
C409	A-5	C0035	B-5			R457	B-7
C410	B-4	C0036	C-4	Q201	D-3	R458	B-7
C411	A-5	C0037	B-4	Q202	D-2	R459	B-7
C412	B-3	C0038	C-4	Q203	D-2	R460	A-7
C413	A-4	C0042	B-4	Q204	D-4	R461	B-7
C414	A-4	C0043	B-4	Q208	D-4	R462	B-7
C451	B-7	C0051	C-4	Q401	B-4	R463	A-6
C452	B-7	C0052	C-4	Q451	A-6	R464	A-6
C453	B-7	C0061	C-4	Q452	A-6	R465	A-6
C454	B-7	C0063	C-5	Q453	B-5	R466	A-5
C455	B-7			Q553	D-6	R467	A-6
C456	B-7	CN152	A-8			R468	A-6
C457	B-6	CN801	D-1	R202	D-2	R469	A-6
C458	B-6	CN0101	C-6	R203	D-3	R470	A-6
C459	B-7			R204	D-2	R471	A-6
C460	A-7	D451	A-6	R205	D-2	R472	A-6
C461	A-7	D502	D-5	R206	D-3	R473	A-6
C462	B-6	D201	D-3	R207	D-3	R474	A-6
C463	A-7	D801	C-1	R208	D-2	R475	A-6
C464	A-6	D802	B-1	R209	D-3	R476	A-6
C465	A-6	D803	C-1	R210	D-2	R477	A-6
C466	A-6			R211	D-2	R478	B-5
C467	A-7	F801	D-1	R212	D-4	R479	A-5
C468	A-6			R215	D-4	R480	B-6
C469	A-7	FB001	B-5	R216	D-4	R484	A-6
C470	A-7	FB002	C-5	R223	D-3	R502	D-5
C471	A-6	FB201	C-3	R224	D-2	R503	D-5
C472	A-7	FB203	C-3	R226	D-3	R504	D-6
C473	A-7	FB401	B-4	R233	D-4	R506	D-6
C474	A-7	FB501	D-5	R234	D-4	R508	D-5
C475	A-6	FB503	D-5	R236	D-4	R510	D-5
C476	A-6	FB504	D-5	R237	D-4	R511	D-5
C477	A-5	FB505	D-5	R238	D-3	R512	D-5
C479	A-6	FB801	D-2	R239	D-3	R527	D-5
C480	A-6	FB802	C-2	R240	D-3	R570	D-6
C481	A-6	FB803	D-2	R241	D-4	R571	D-6
C482	A-6	FB806	D-2	R242	D-3	R572	D-6
C483	A-6			R243	D-3	R573	D-6
C484	A-6	IC202	D-3	R245	D-3	R578	D-6
C485	B-5	IC401	A-5	R247	D-2	R882	C-2
C486	A-6	IC402	A-3	R248	D-2	R0023	B-5
C501	D-5	IC451	B-7	R249	D-2	R0024	B-5
C502	D-5	IC452	A-7	R251	D-3	R0049	C-4
C503	D-5	IC453	A-5	R252	D-3	R0069	C-4
C506	D-6	IC501	D-5	R253	C-3	R0088	C-4
C508	D-5	IC0101	B-5	R256	C-4		
C509	D-6			R257	C-3	T801	B-1
C510	D-5	L201	D-2	R401	B-3	T802	B-1
C511	D-6	L202	C-4	R402	B-3		
C514	D-5	L203	C-4	R403	A-5	X401	B-3
C515	D-5	L204	D-3	R404	A-4	X501	D-5
C518	D-5	L205	D-4	R405	A-4	X602	A-7
C531	D-4	L207	C-3	R406	A-4		
C561	D-6	L209	C-3	R407	A-4		
C562	D-6	L501	D-4	R408	A-4		



VC-205 BOARD (SIDE B)



VC-205 BOARD (SIDE B)

C152	C-10	C817	C-16	D603	B-13	Q0006	B-12	R620	A-11	R876	C-14
C153	C-10	C818	C-16	D604	A-10	Q0009	B-13	R621	B-13	R877	B-14
C154	C-10	C819	D-16	D605	A-11	Q0014	B-13	R622	B-13	R878	B-14
C155	C-10	C820	C-15	D805	B-16	Q0015	C-13	R623	B-13	R879	B-14
C156	C-10	C821	C-15	D806	B-15	Q0016	C-13	R624	A-13	R883	D-16
C158	C-9	C822	C-15	D807	B-15	Q0018	C-13	R625	A-13	R884	D-16
C159	C-9	C823	C-16	D808	C-15	Q0022	C-13	R626	A-13	R890	C-16
C160	C-10	C824	C-15	D809	B-16	Q0023	C-13	R627	B-13	R891	C-16
C161	C-10	C825	C-15	D810	A-16	Q0024	C-13	R628	B-13	R892	B-14
C162	C-10	C826	C-15	D811	A-15	Q0027	C-13	R629	B-13	R893	D-16
C171	C-10	C827	B-15	D812	A-16	Q0030	C-12	R630	A-13	R894	C-16
C172	C-9	C828	C-15	D813	B-16	Q0032	C-12	R631	A-13	R895	B-14
C173	C-10	C829	A-15	D0001	D-12	Q0033	C-12	R632	A-11	R0001	C-12
C191	C-10	C830	B-15			Q0034	C-12	R633	A-13	R0002	C-11
C192	C-10	C831	B-15	FB202	D-14	Q0035	C-12	R634	A-11	R0003	C-11
C193	B-10	C832	C-15	FB205	C-14	Q0036	B-13	R635	A-11	R0004	C-12
C194	B-11	C833	B-16	FB206	D-14	Q0037	C-12	R636	A-10	R0005	C-12
C205	B-13	C834	A-16	FB506	D-13	Q0038	C-12	R637	B-13	R0006	C-11
C224	D-14	C835	A-15	FB601	B-13	Q0039	C-12	R640	A-13	R0007	C-12
C227	D-13	C836	B-15	FB602	B-13	Q0040	C-12	R641	A-13	R0008	C-12
C230	D-13	C837	C-15			Q0041	C-12	R642	A-11	R0009	C-11
C232	D-14	C838	B-15	IC151	C-9			R643	A-11	R0010	D-12
C233	D-13	C839	B-16	IC152	B-10	R153	C-10	R644	A-10	R0011	D-11
C234	D-13	C840	B-16	IC201	C-13	R155	C-10	R645	B-13	R0014	B-12
C235	D-14	C841	A-16	IC204	D-14	R156	C-10	R646	A-11	R0015	B-12
C236	D-14	C842	B-16	IC502	D-12	R157	C-10	R801	D-15	R0016	C-12
C243	D-14	C850	B-13	IC551	D-11	R158	C-9	R803	D-15	R0017	C-12
C244	D-14	C851	B-14	IC601	D-16	R160	C-9	R804	D-15	R0018	C-12
C245	D-14	C852	C-14	IC602	B-13	R171	C-9	R807	D-16	R0020	C-13
C246	D-14	C853	A-14	IC603	B-13	R172	C-9	R808	D-16	R0025	C-12
C247	D-14	C854	A-14	IC604	A-12	R173	C-9	R810	D-16	R0026	C-12
C248	D-14	C855	B-14	IC605	A-11	R174	C-9	R814	D-16	R0027	B-12
C249	C-13	C856	A-14	IC801	D-15	R217	C-14	R815	D-15	R0029	B-12
C252	C-14	C857	C-14			R220	D-14	R816	D-16	R0030	B-12
C261	D-13	C858	C-16	L151	C-10	R227	D-13	R817	D-15	R0031	B-12
C262	D-13	C859	D-15	L152	C-10	R228	D-13	R818	D-15	R0032	B-12
C263	D-13	C869	B-14	L153	C-10	R229	D-13	R819	D-15	R0033	B-12
C264	D-13	C0001	C-11	L191	C-10	R230	D-14	R820	D-15	R0034	B-12
C265	D-13	C0002	C-12	L192	B-11	R232	D-14	R821	D-15	R0041	B-13
C266	D-13	C0003	C-11	L206	D-14	R244	D-14	R822	D-15	R0044	B-13
C487	A-10	C0004	C-11	L261	D-13	R246	D-14	R823	D-16	R0054	B-13
C488	A-10	C0005	D-11	L262	D-13	R250	D-14	R824	D-15	R0055	B-13
C512	D-12	C0006	C-11	L601	D-16	R261	D-13	R825	D-15	R0056	C-13
C513	D-12	C0007	C-11	L171	C-9	R271	D-13	R826	D-15	R0057	C-13
C517	D-12	C0008	C-12			R272	D-14	R829	D-15	R0058	C-13
C520	D-12	C0009	C-12	Q152	C-10	R422	A-13	R830	C-15	R0060	C-13
C521	D-12	C0011	C-12	Q171	C-9	R423	A-13	R831	C-15	R0061	C-13
C522	D-12	C0012	C-12	Q552	D-11	R424	A-13	R832	D-16	R0062	C-13
C523	D-12	C0013	C-12	Q601	A-11	R425	A-13	R833	D-15	R0065	C-13
C524	D-12	C0014	C-12	Q602	A-11	R481	A-10	R834	D-15	R0066	C-13
C525	D-12	C0026	B-12	Q801	B-16	R482	A-10	R835	D-15	R0072	C-13
C526	D-12	C0027	B-12	Q802	B-16	R483	A-10	R836	D-15	R0073	C-13
C527	D-12	C0028	B-12	Q803	B-15	R507	D-12	R837	C-15	R0074	C-13
C529	D-13	C0031	B-12	Q804	B-15	R509	D-12	R838	D-15	R0075	C-13
C530	D-13	C0039	B-13	Q805	C-15	R529	D-12	R839	D-15	R0076	D-13
C534	D-12	C0045	C-13	Q806	A-16	R558	D-11	R840	D-15	R0079	C-12
C535	D-12	C0046	C-13	Q807	A-15	R559	D-11	R841	D-15	R0080	C-12
C552	D-11	C0047	C-13	Q808	B-15	R560	D-11	R842	C-16	R0085	C-12
C553	C-11	C0049	C-13	Q809	A-15	R561	D-11	R843	C-15	R0090	C-12
C555	D-11	C0053	C-13	Q810	A-15	R562	D-11	R844	C-15	R0091	C-13
C557	C-11	C0054	C-12	Q811	B-15	R563	C-11	R845	C-15	R0093	C-13
C558	C-11	C0055	C-12	Q812	C-15	R564	C-11	R846	C-15	R0098	C-13
C560	C-11	C0056	C-12	Q813	B-14	R565	D-11	R847	B-14	R0099	D-12
C567	D-11	C0058	C-13	Q814	B-14	R566	C-11	R848	B-14	R0100	D-13
C568	C-11	C0062	C-12	Q815	A-16	R567	C-11	R849	B-14	R0104	C-12
C569	C-11	C0066	D-12	Q816	B-14	R568	C-11	R850	B-14	R0106	C-12
C602	D-16	C0067	C-13	Q817	B-13	R569	C-11	R851	A-16	R0108	D-12
C603	B-13	C0068	C-13	Q818	B-14	R574	D-11	R852	A-16	R0109	C-12
C604	A-13	C0069	D-13	Q819	B-14	R575	C-11	R853	B-14	R0110	C-13
C605	A-11	C0070	C-12	Q820	B-14	R576	C-11	R854	B-14	R0112	C-12
C606	A-11	C0071	C-12	Q821	A-14	R577	C-11	R855	A-14	R0114	B-13
C607	A-11	C0072	C-12	Q822	A-14	R601	A-11	R856	A-14	R0123	B-11
C608	A-11	C0075	D-12	Q823	A-14	R602	A-11	R857	C-14	R0124	C-12
C609	B-13	C0076	B-13	Q824	A-14	R603	A-13	R859	B-14	R0125	C-12
C610	A-13	C0081	D-13	Q825	C-14	R604	A-13	R860	B-14	R0126	C-12
C611	A-12	C0082	C-13	Q826	B-14	R605	A-13	R861	C-14	R0127	C-12
C612	A-11	C0083	D-12	Q827	B-14	R606	B-13	R862	C-14	R0128	D-12
C613	A-11	C0084	D-12	Q828	A-14	R607	B-13	R863	C-14	R0129	D-12
C801	D-15	C0085	D-12	Q829	B-14	R608	B-13	R864	B-14	R0130	C-12
C802	D-15	C0086	C-13	Q830	B-14	R609	A-13	R865	B-14	R0131	D-12
C803	D-15			Q831	A-14	R610	A-13	R866	B-14	R0132	C-12
C804	D-16	CN151	B-10	Q832	B-14	R611	A-13	R867	B-14	R0133	C-12
C805	C-16	CN401	A-14	Q833	B-14	R612	A-13	R868	B-14	R0134	C-12
C806	C-16	CN501	D-11	Q834	C-14	R613	B-13	R869	B-14	R0135	D-12
C809	D-15	CN601	A-13	Q835	B-16	R614	A-13	R870	A-14		
C811	D-15			Q836	C-16	R615	A-11	R871	B-14	X601	A-11
C812	D-15	D202	D-14	Q0001	C-11	R616	B-11	R872	B-14		
C814	D-16	D551	D-11	Q0002	C-12	R617	B-11	R873	C-14		
C815	D-15	D601	D-16	Q0003	C-11	R618	B-11	R874	C-14		
C816	D-15	D602	A-11	Q0004	D-11	R619	B-13	R875	C-14		

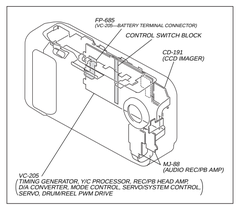
For printed wiring boards

- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.
- Chip parts

Transistor

Diode

There are few cases that the part printed on this diagram isn't mounted in this model.



MAIN BOARD
VC-205

For schematic diagram
• Refer to page 4-11 for printed wiring board.

VC-205 BOARD (1/8)

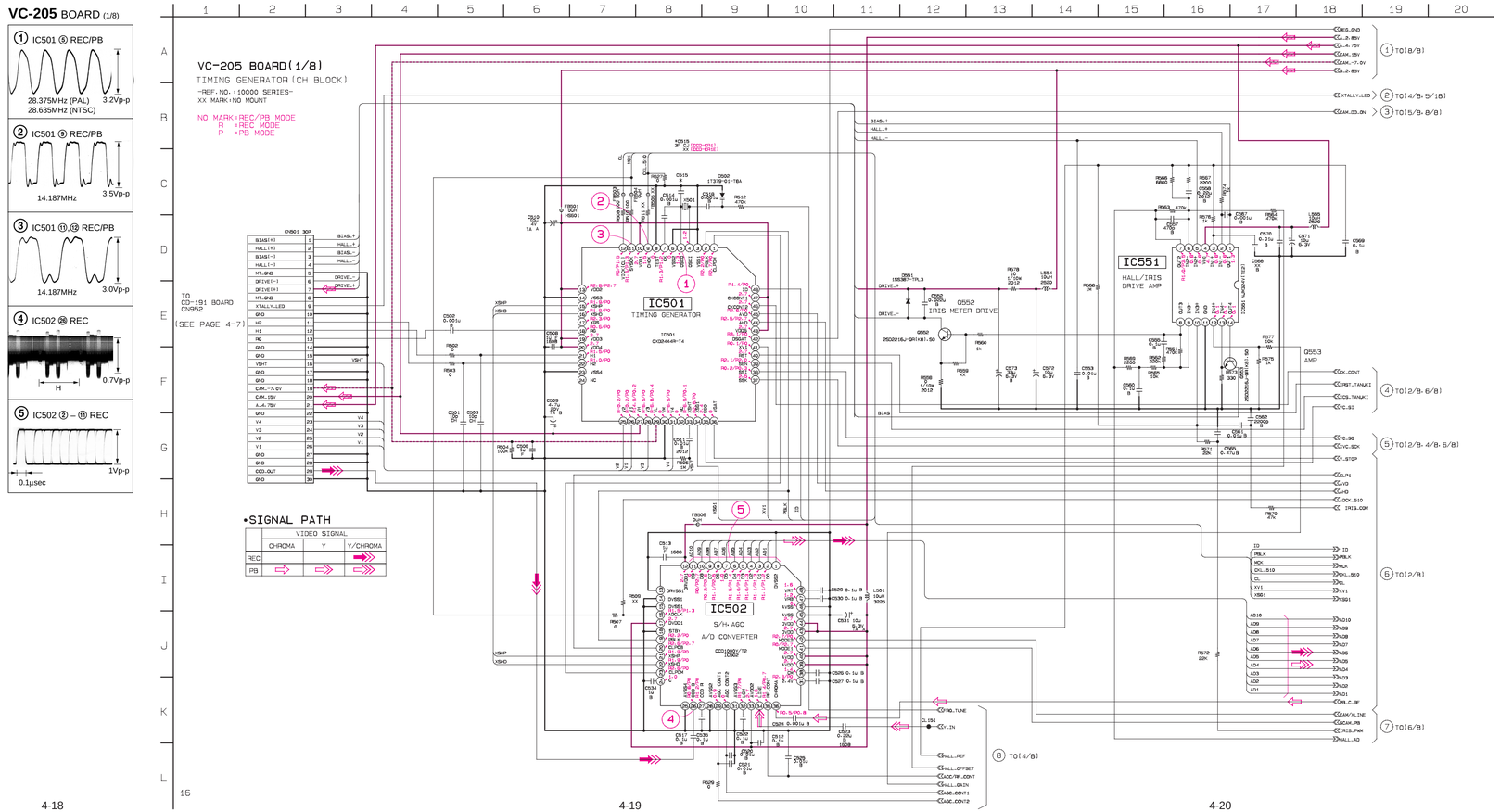
① IC501 ⑥ REC/PB
28.375MHz (PAL) 28.635MHz (NTSC) 3.2Vp-p

② IC501 ⑥ REC/PB
14.187MHz 3.5Vp-p

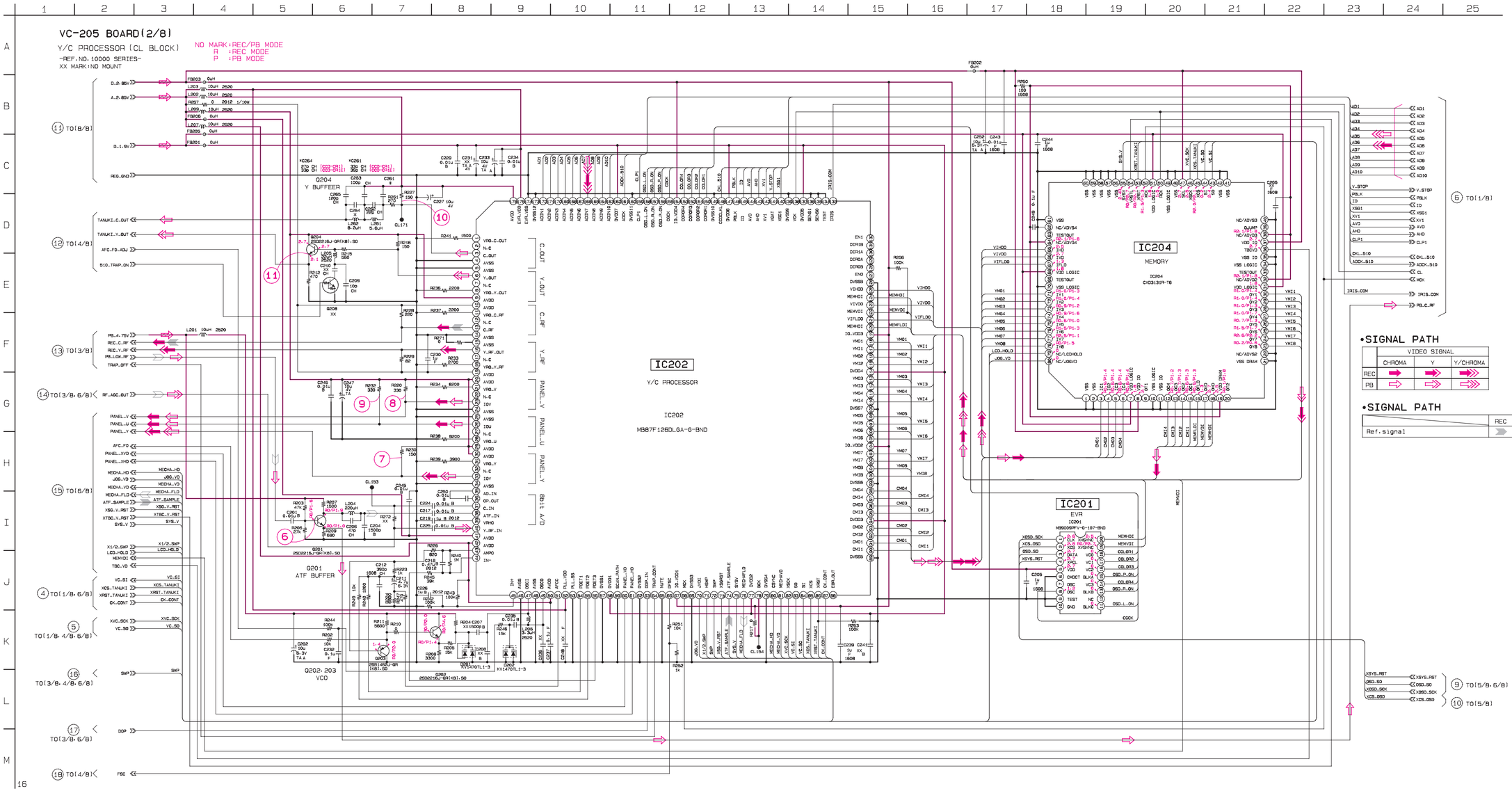
③ IC501 ⑪,⑫ REC/PB
14.187MHz 3.0Vp-p

④ IC502 ㉘ REC
H 0.7Vp-p

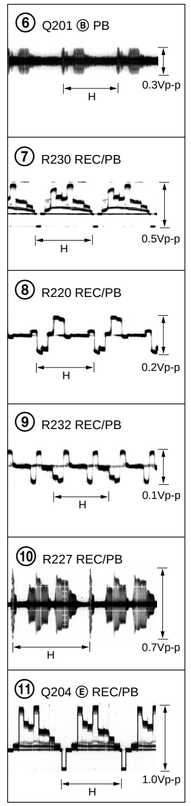
⑤ IC502 ② – ⑪ REC
0.1µsec 1Vp-p



For schematic diagram
• Refer to page 4-11 for printed wiring board.



VC-205 BOARD (2/8)



•SIGNAL PATH

	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	⇨	⇨	⇨
PB	⇨	⇨	⇨

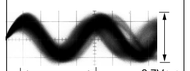
•SIGNAL PATH

	REC	REC/PB	PB
Ref.signal	⇨		⇨

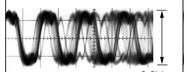
For schematic diagram
• Refer to page 4-11 for printed wiring board.

VC-205 BOARD (3/8)

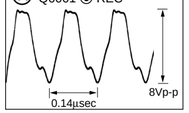
⑫ Q0014 Ⓔ PB



⑬ IC101 ① REC



⑭ Q0001 ⓒ REC



VC-205 BOARD(3/8)
REC/PB HEAD AMP (RR BROCK)
-REF.NO.10000 SERIES-
XX MARK:NO MOUNT

NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE

VIDEO CARTRIDGE is replaced as a block.So that there SCHEMATIC DIAGRAM and PRINTED WIRING BOARD are omitted

•SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	⇨	⇨	⇨	⇨
PB	⇦	⇦	⇦	⇦

•SIGNAL PATH

	REC	REC/PB	PB
Drum speed servo		▶	
Drum phase servo		▶	
Drum servo (speed and phase)		▶	
T REEL speed servo		▶	
T REEL servo (speed and phase)		▶	
Ref.signal	▶		◁

IC0101
VIDEO HEAD
REC/PB AMP
CXA2012R-T4

*R065 820(CCD-CR1) 4700(CCD-CR1E)
*R069 1500(CCD-CR1) 1200(CCD-CR1E)

Q0001·0003
ERASE HEAD
OSC

Q0002
ERASE CURRENT
SWITCH

Q0004
ERASE HEAD
ON SWITCH

Q0009
RF_AGC_SW

Q0035
AGC_SLOW_SW

Q0014·0015
FILTER

Q0016
FILTER SWITCH

Q0018
FILTER

Q0022
RF AGC AMP

Q0023
PB +B SWITCH

Q0024
REC/PB
SWITCH

Q0027
REC Y AMP

Q0038
SWITCH

Q0035·0037
TRAP SWITCH

Q0033
NR/VE
SWITCH

Q0030
AMP

Q0034
AMP

Q0039·0040·0041·0032
FILTER

VIDEO CARTRIDGE

For schematic diagram
• Refer to page 4-11 for printed wiring board.

VC-205 BOARD (4/8)

D/A CONVERTER (EVR BLOCK)

-REF.NO.:10000 SERIES-

XX MARK:NO MOUNT

NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE

TO MJ-88 BOARD CN301 (SEE PAGE 4-47)

CN151 30P

AU_2.85V	30	
REC_AFM	29	→ (22) TO(3/8)
AU_2.85V	28	
1.5M_DEV	27	
AU_2.85V	26	
PB_RF	25	→ (19) TO(3/8, 6/8)
BPF_MONI	24	
AU_BPF	23	
HP_L_OUT	22	
SWP	21	
REG_GND	20	
XCS_AU	19	
REG_GND	18	
XVC_SCK	17	
REG_GND	16	
VC_SO	15	
REG_GND	14	
FSC	13	→ (18) TO(2/8)
REG_GND	12	
XTALLY_LED	11	→ (2) TO(1/8, 5/8)
FXD_REC	10	→ FXD_REC
XSIRCS_SIG	9	→ XSIRCS_SIG
A_4.75V	8	
LI_BACK	7	→ LI_BACK
A_4.75V	6	→ (29) TO(5/8)
A_4.75V	5	
VIDEO_GND	4	
VIDEO_GND	3	
V_OUT	2	
V_JACK_IN	1	→ V_JACK_IN (28) TO(6/8)

(8) TO(1/8)

HALL_GAIN, HALL_OFFSET, HALL_REF, FRQ_TUNE, AGC_CONT1 (CL163), AGC_CONT1, AGC_CONT2 (CL154), ACC/RF_CONT (CL155), Y_IN

R156 0

1.5M_DEV, AU_BPF, SWP, XVC_SCK, VC_SO

R155 2200

C162 220 CH, C161 560 CH

R153 270, L153 5.6uH 2520, L152 8.2uH 2520

Q152 2SB1462J-QR(K8).SO Y AMP

C152 120p CH, C153 150p CH

C154 1u B 2012, R157 XX, R158 68, R160 XX

C159 10u 6.3V A, C157 100u 4V TA C, C158 22u 4V TA A

C150 0.01u B, L151 10uH 2520

IC151 BA7664FV-E2
MUTE_A, Y IN, GND, MUTE_B, C IN, VCC, Y OUT, V NF

IC151
Y/C MIX BUFFER

BPF_MONI, HP_L_OUT, XCS_AU, DA_STB, XV_OUT_ON

(12) TO(2/8)

TANUKI_C_OUT, AFC_F0_ADJ, 510_TRAP_ON, TANUKI_Y_OUT

C155 * B, C171 * B, R171 *, Q171 *, R174 *, C173 * B, R172 *, R173 *, L171 * 2520, C172 * CH

ACC/RF_CONT, 1.5M_DEV, AU_BPF (CL162 (V_ON))

IC152
D/A CONVERTER(EVR)
MB88344
5V
3V

REC_Y_ADJ, MT_F0, REC_L_CONT, REC_Y/MT_CONT, VSS2, SWP(C1), A_4.8V(VCC), RF_AGC_OFF, XMP/ME, DOC_DET, RF_AGC_CONT

C191 0.01u B, L191 10uH 2520, C192 10u 6.3V TA A

ACC/RF_CONT, AUDIO_DEV, VIDEO_CAR, VIDEO_DEV, FLIP, LCD_BL_CONT, V_ON, 1.5M_DEV, AU_BPF, 1.7M_DEV, A_FADE, ZM_MIC_CONT

RP_IR, AFC_F0_ADJ, FRQ_TUNE, CFG_DUTY, SP_VOL, E/VL, 510_TRAP_ON, LP/XSP, MT_Q, AGC_CONT2, AGC_CONT1

VC_SO, XVC_SCK, DA_STB, HALL_OFFSET, HALL_GAIN, HALL_REF, IR_CONT

L192 10uH 2520, C193 10u 6.3V TA A, C194 0.01u B

CL152, CL169, CL161(E/XL), CL167, CL168

AU_2.85V, A_4.75V, A_2.85V, REG_GND → (26) TO(8/8)

RP_IR, MT_Q, DOC_DET, MT_F0, REC_L_CONT, REC_Y/MT_CONT, RF_AGC_OFF, XMP/ME, RF_AGC_CONT, REC_Y_ADJ → (21) TO(3/8)

AFC_F0_ADJ, FRQ_TUNE, CFG_DUTY, 510_TRAP_ON → CFG_DUTY (27) TO(7/8)

MT_Q, AGC_CONT2, AGC_CONT1, SWP → (16) TO(2/8, 3/8, 6/8)

VC_SO, XVC_SCK → (5) TO(1/8, 2/8, 6/8)

*MARKED:MOUNT TABLE

	CCD-CR1	CCD-CR1E
C155	0.01u 16V B	XX
C171	XX	0.01u 16V B
C172	XX	330p 16V B
C173	XX	0.01u 16V B
L171	XX	100uH
Q171	XX	2SD2216J QR(K8).SO
R171	XX	22k
R172	XX	22k
R173	XX	2200
R174	XX	470

•SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				⇒
PB	⇨	⇨	⇨	⇨

VC-205 BOARD (4/8)

(15) IC151 ② REC/PB — 1.0Vp-p

(16) IC151 ④ REC/PB — 0.5Vp-p

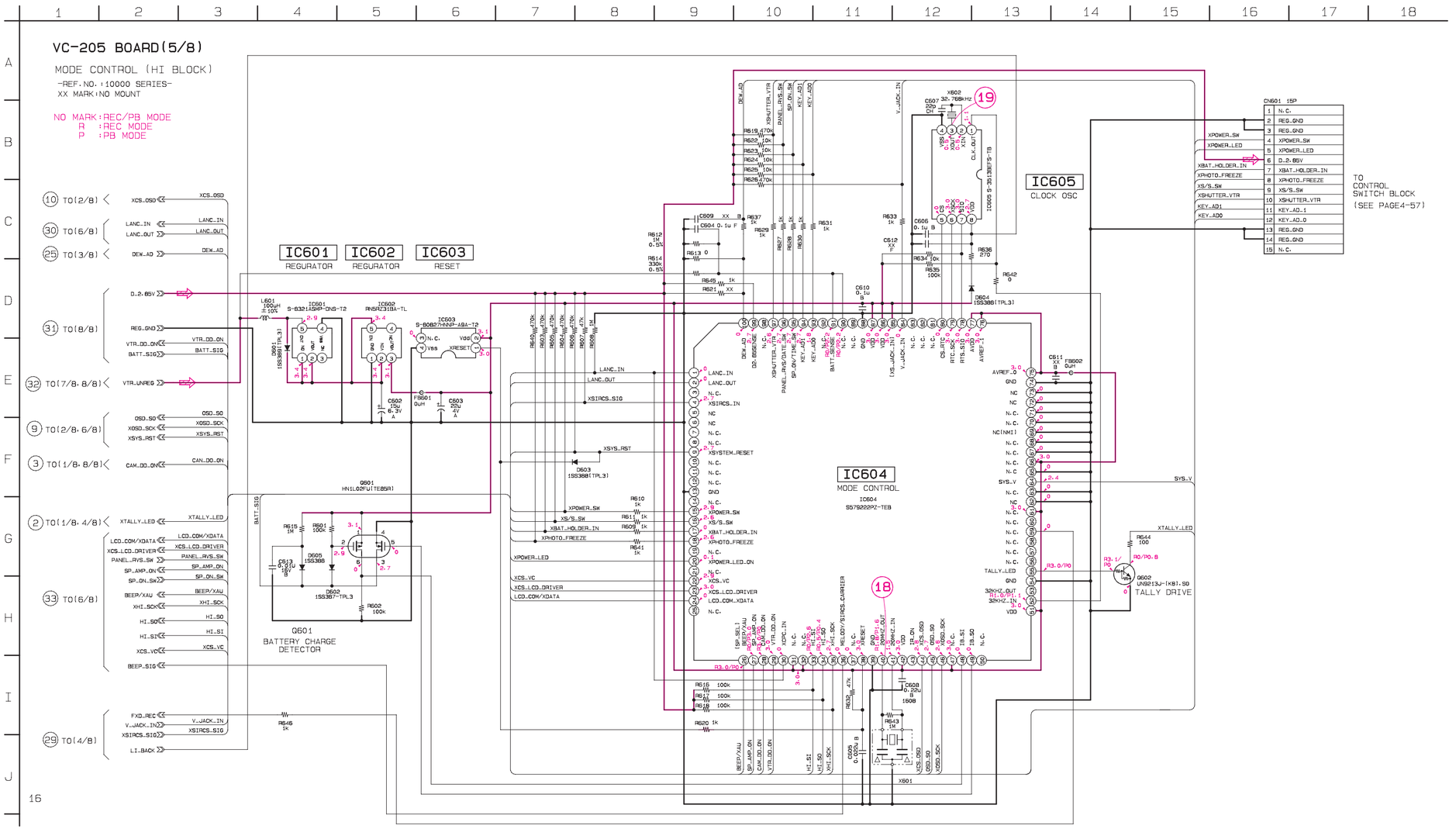
(17) IC151 ⑦ REC/PB — 2.0Vp-p

For schematic diagram
• Refer to page 4-11 for printed wiring board.

VC-205 BOARD (5/8)

⑱ IC604 ㊵ REC/PB

⑲ IC605 ③ REC/PB



For schematic diagram
• Refer to page 4-11 for printed wiring board.

VC-205 BOARD(6/8)

SERVO/SYSTEM CONTROL (MC BLOCK)

-REF.NO.:10000 SERIES-
XX MARK:NO MOUNT

NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE

•SIGNAL PATH

	REC	REC/PB	PB
Drum speed servo		➤	
Drum phase servo		➤	
Drum servo (speed and phase)		➤	
REEL speed servo		➤	
REEL servo (speed and phase)		➤	
Ref.signal	➤		➤

•SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➤			
PB	➤	➤		➤

VC-205 BOARD (6/8)

20 IC402 ① REC/PB

20MHz 1.5Vp-p

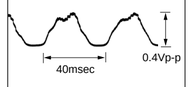
IC402
SERVO/SYSTEM CONTROL
IC402
MB91191PFF-G-116-BND-ER

IC401
EEP ROM

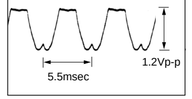
For schematic diagram
• Refer to page 4-11 for printed wiring board.

VC-205 BOARD (7/8)

㉑ IC451 ⑤,⑦,⑨ REC/PB

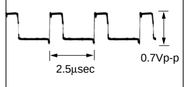


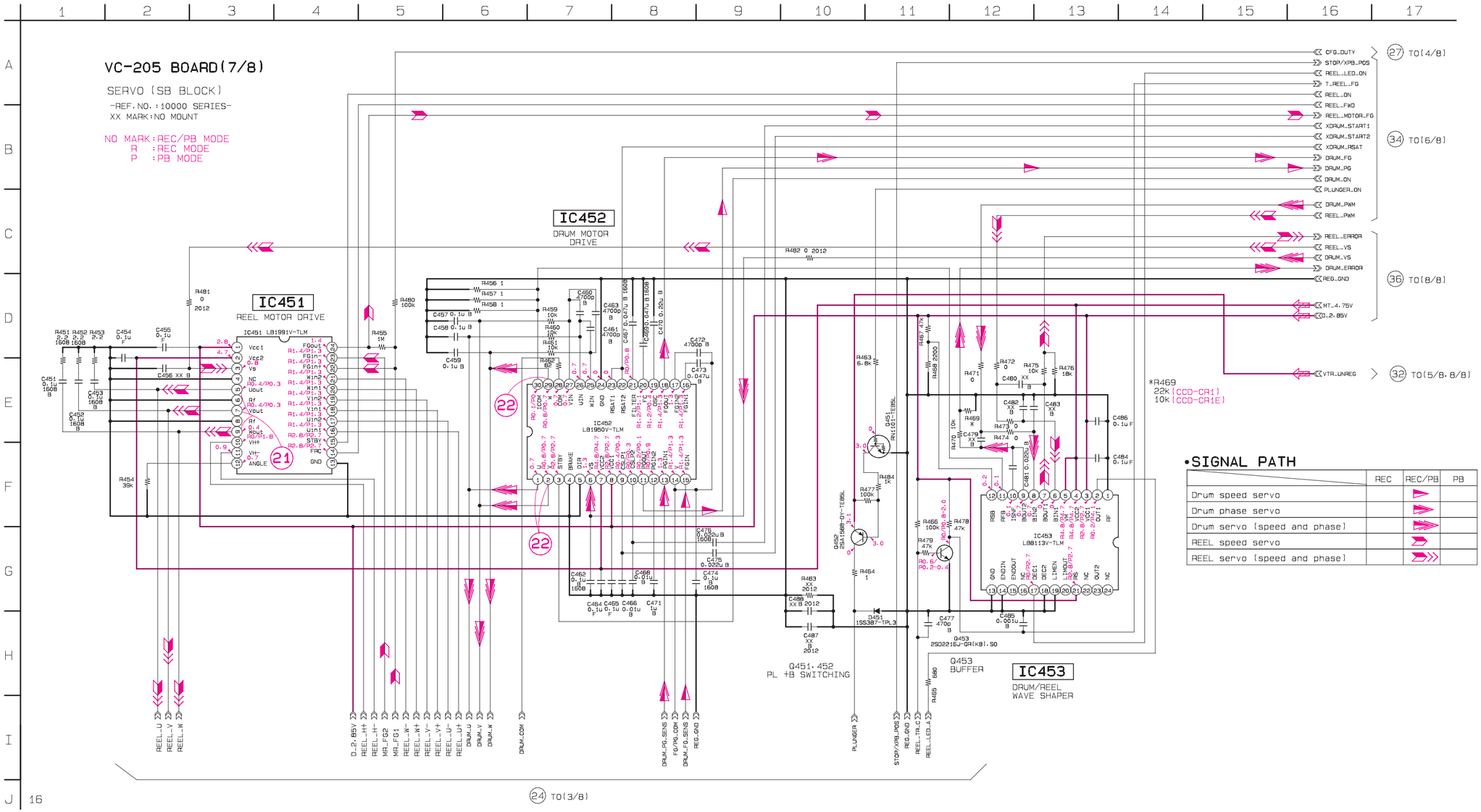
㉒ IC452 ①,②,㉙



VC-205 BOARD (8/8)

㉓ IC801 ③ REC/PB

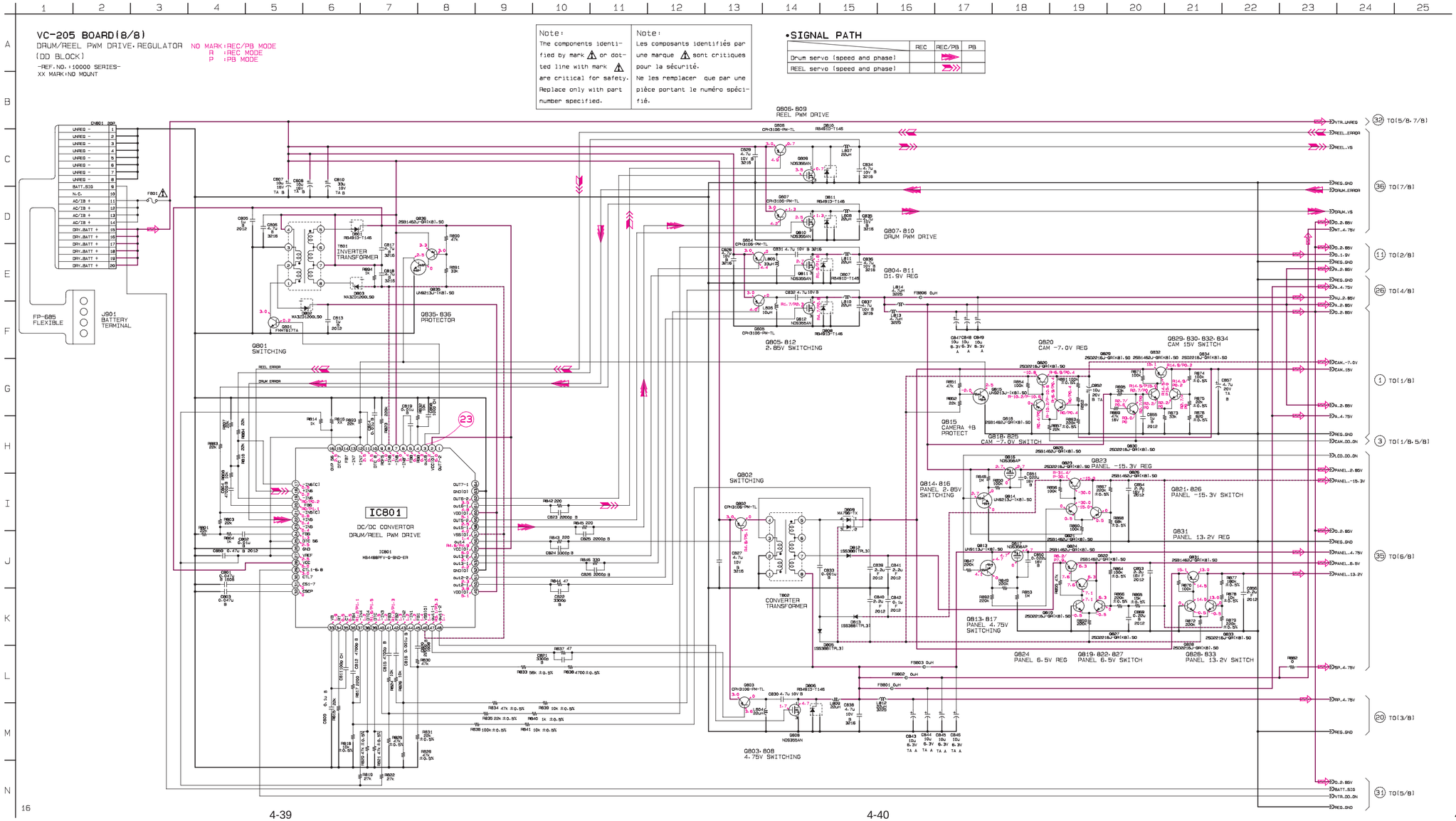




•SIGNAL PATH

	REC	REC/PB	PB
Drum speed servo		▷	
Drum phase servo		▷	
Drum servo (speed and phase)		▷▷	
REEL speed servo		▷	
REEL servo (speed and phase)		▷▷▷	

For schematic diagram
- Refer to page 4-11 for printed wiring board.
- Refer to page 4-36 for waveforms.



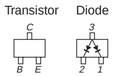
MJ-88 BOARD

BT301	F-4	CN301	F-1
		CN753	E-4
C301	D-6		
C303	D-6	D385	A-4
C304	E-6	D386	A-4
C305	E-6	D391	A-6
C306	D-6	D392	C-3
C307	D-3	D393	B-4
C308	D-4		
C309	E-6	IC301	E-6
C310	D-4	IC386	A-3
C311	D-4	IC751	E-3
C312	E-6		
C313	E-5	L391	C-4
C314	E-5		
C315	E-6	Q301	D-5
C316	E-6	Q302	D-5
C317	E-5	Q391	A-4
C318	E-6	Q392	B-4
C319	E-6	Q751	E-3
C320	E-5		
C321	E-5	R306	D-6
C322	E-5	R308	D-5
C323	F-6	R311	E-3
C324	F-4	R312	E-5
C325	E-5	R313	F-6
C326	F-4	R315	F-3
C328	F-6	R316	F-6
C329	E-3	R317	F-6
C385	A-3	R318	E-3
C391	C-3	R319	E-3
C392	C-4	R320	D-3
C393	C-4	R385	A-4
C751	E-4	R386	A-4
C752	E-4	R391	B-4
C753	E-4	R392	C-3
C754	E-4	R397	A-4
C755	E-3	R398	A-4
C756	E-4	R751	E-4
C757	E-4	R752	E-4
C758	E-3	R754	E-4
C759	E-4	R755	E-4
C760	F-3	R756	E-4
C761	E-4	R757	E-4
C762	E-4	R758	E-4
C763	E-3		

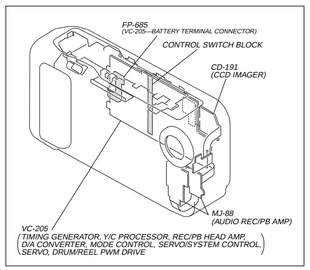
For printed wiring boards

- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.
- Chip parts

Transistor Diode

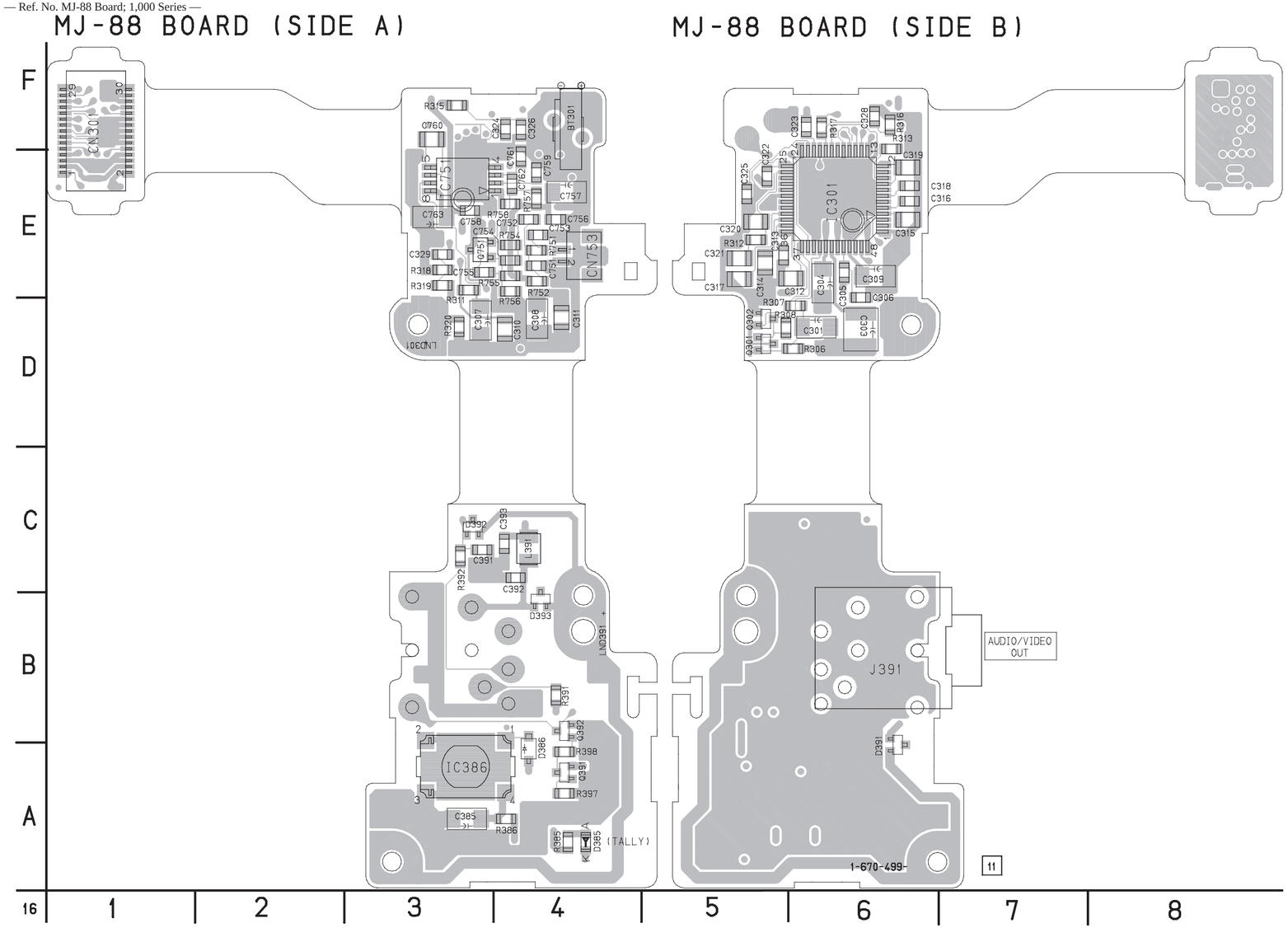


There are few cases that the part printed on this diagram isn't mounted in this model.



MJ-88 (AUDIO REC/PB AMP) PRINTED WIRING BOARD

— Ref. No. MJ-88 Board; 1,000 Series —

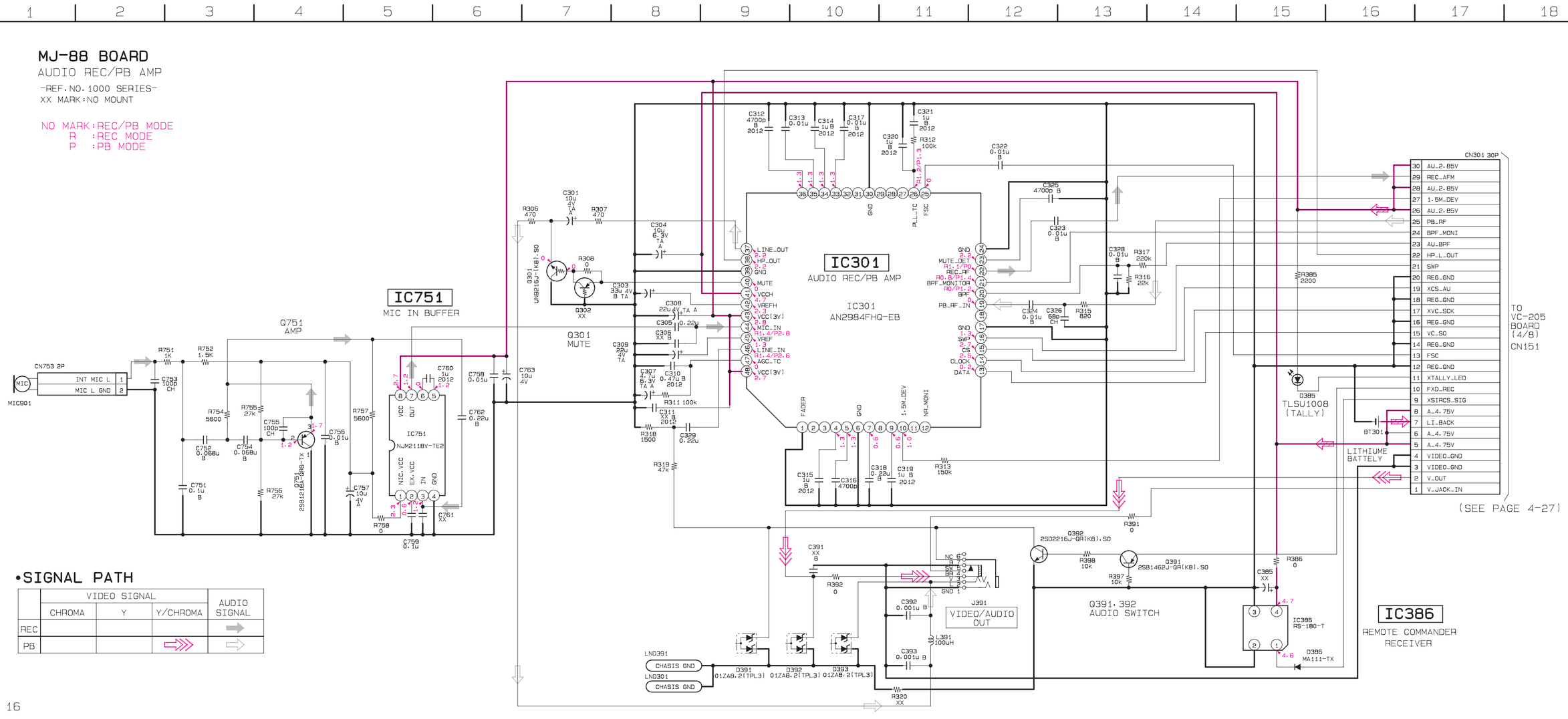


MJ-88 BOARD

AUDIO REC/PB AMP

-REF.NO.1000 SERIES-
XX MARK:NO MOUNT

NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE

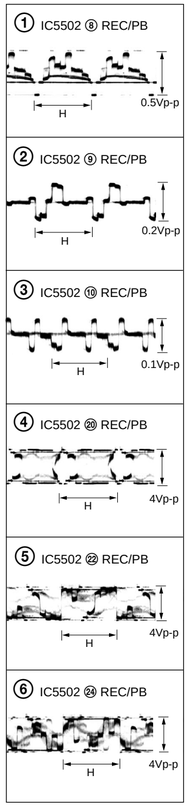


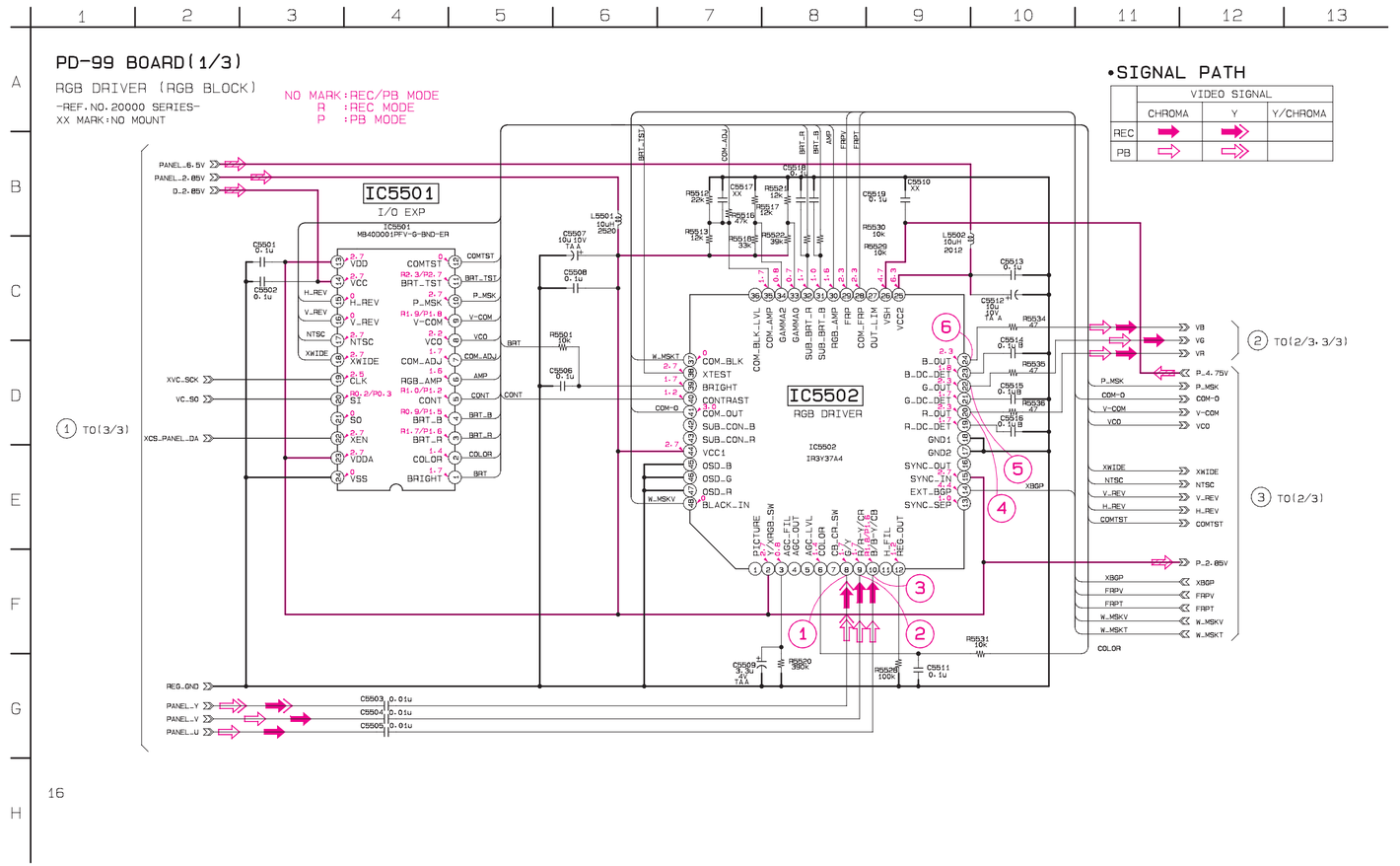
•SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC				⇒
PB			⇛	⇨

For schematic diagram
• Refer to page 4-55 for printed wiring board.

PD-99 BOARD (1/3)





For schematic diagram

• Refer to page 4-55 for printed wiring board.

PD-99 BOARD (2/3)

TIMING GENERATOR (TG BLOCK)

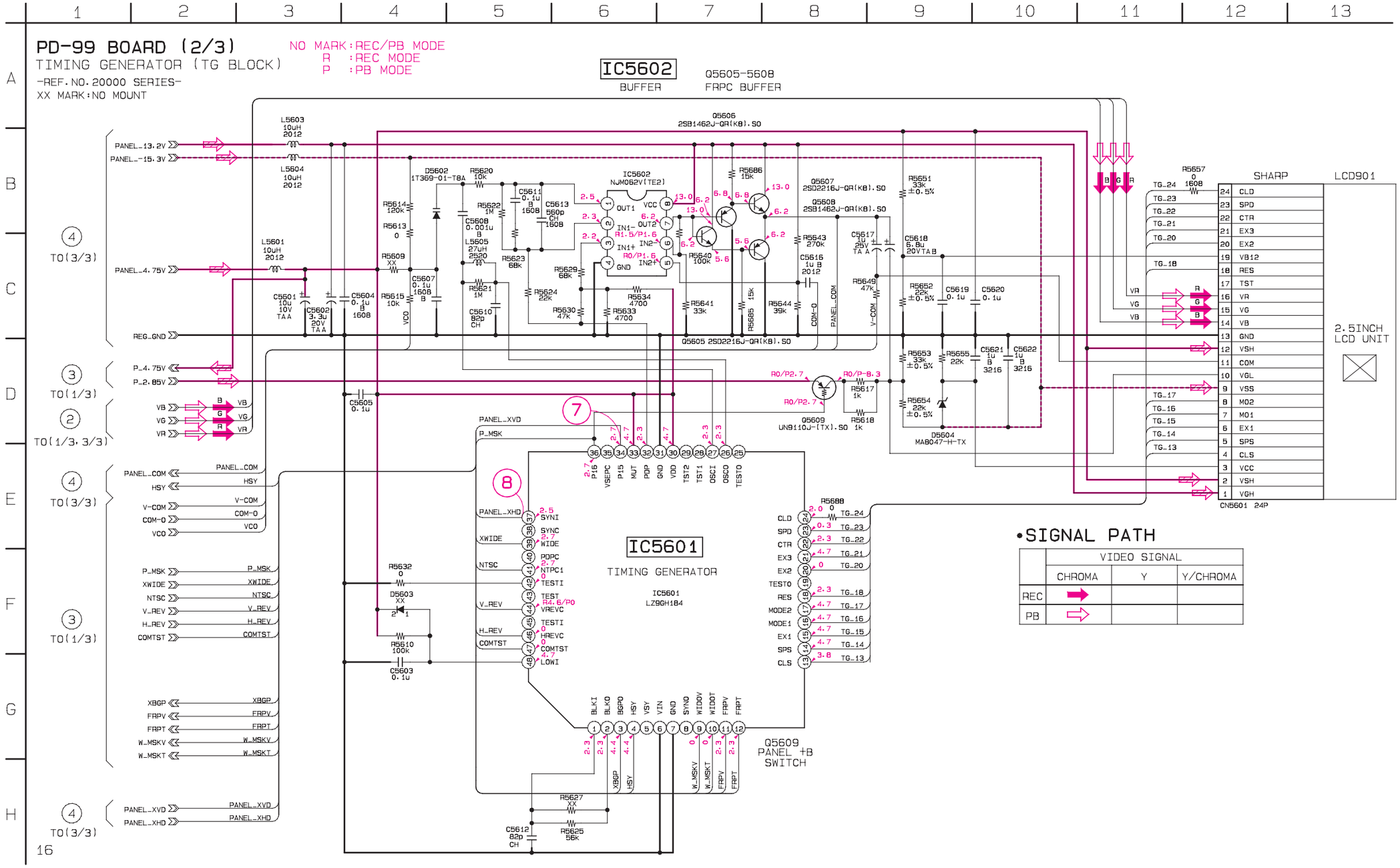
-REF. NO. 20000 SERIES-

XX MARK : NO MOUNT

NO MARK : REC/PB MODE
R : REC MODE
P : PB MODE

IC5602
BUFFER

Q5605-5608
FRPC BUFFER

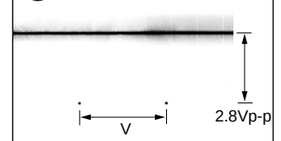


•SIGNAL PATH

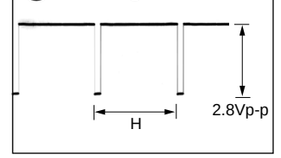
	VIDEO SIGNAL		
	CHROMA	Y	Y/CHROMA
REC	➡		
PB	⇨		

PD-99 BOARD (2/3)

⑦ IC5601 ㉞ REC/PB



⑧ IC5601 ㉟ REC/PB



For schematic diagram
• Refer to page 4-55 for printed wiring board.

PD-99 BOARD(3/3)

NO MARK:REC/PB MODE
R :REC MODE
P :PB MODE

SP AUD10 AMP(SP BLOCK)
– REF.NO.:20000 SERIES –
XX MARK:NO MOUNT

TO
VC-205 BOARD
(6/8)
CN401

(SEE PAGE 4-35)

CN701 33P

XCS_STAR	33
VC_SI	32
VC_SO	31
XVC_SCK	30
XCS_PANEL_DA	29
D_2.85V	28
REG_GND	27
PANEL_U	26
PANEL_XVD	25
PANEL_V	24
PANEL_XHD	23
PANEL_Y	22
REG_GND	21
PANEL_2.85V	20
PANEL_4.75V	19
PANEL_6.5V	18
PANEL_13.2V	17
PANEL_–15.3V	16
PANEL_VR	15
PANEL_COM	14
PANEL_VG	13
PANEL_H_START	12
PANEL_VB	11
PANEL_RVS/DATE_SW	10
BEEP_SIG	9
MT_GND	8
BEEP/XAU	7
HP_L_OUT	6
SP_AMP_ON	5
SP_4.75V	4
SP_ON/TIME_SW	3
SP_4.75V	2
F_BUSY	1

PANEL_XVD, PANEL_XHD, PANEL_13.2V, PANEL_–15.3V, PANEL_COM, HSY, PANEL_4.75V, REG_GND
④ TO(2/3)

VC_SO, XVC_SCK, XCS_PANEL_DA, D_2.85V, PANEL_U, PANEL_V, PANEL_Y, REG_GND, PANEL_2.85V, PANEL_6.5V
① TO(1/3)

VR, VG, VB
② TO(1/3),(2/3)

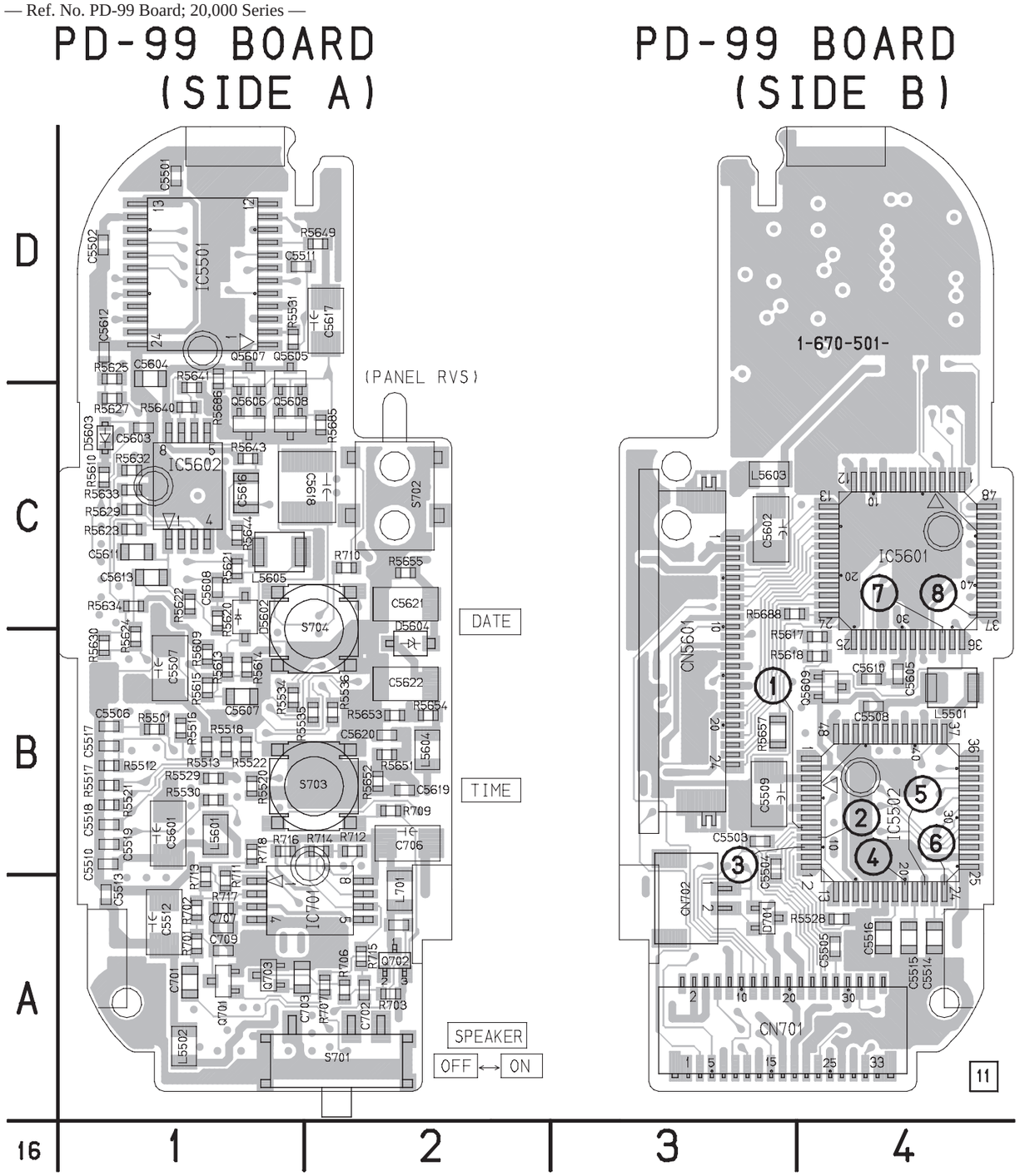
•SIGNAL PATH

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA	
REC	➡	➡		
PB	⇨	⇨		⇨

Q702 2SJ347-TE85L
SP 4.75V SW
4.7 R0/P4.6
R703 1M
R4.7/P0
C708 0.022u B
R706 100k R4.2/P0
L701 10uH
C706 10u 6.3V TA AA
R716 22k
R713 47k
R711 47
R0/P2.6
R707 10k
C703 0.47u F
R717 22k
C707 0.01u B
Q701 UN9216J-(K8).SO MUTING
R3.0/P0
C709 0.1u B
Q703 UN9213J-(K8).SO SP AMP ON SW
C701 0.047u B 1608
R701 1k
R702 6800
C702 0.01u B
IC701
SP AUDIO AMP
R0/P2.3
GND IN1+ IN1– OUT1
IN2+ IN2– OUT2 VCC
IC701 NJM3414AV(TE2)
R0/P4.6
D701 01ZA8.2(TPL3)
CN702 2P
SP_OUT(–)
SP_OUT(+)
SP901 SPEAKER
R718 47k
R715 33k
R714 47k
R712 47
S701 SPEAKER
S703 TIME R709 47k
OFF | ON
S704 DATE R710 47k
(PANEL_RVS) S702

PD-99 (RGB DECODER, TIMING GENERATOR, SP AUDIO AMP) PRINTED WIRING BOARD

— Ref. No. PD-99 Board; 20,000 Series —

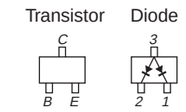


PD-99 BOARD

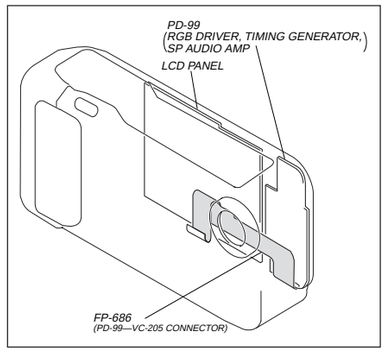
C701	A-1	Q5607	C-1
C702	A-2	Q5608	C-1
C703	A-1	Q5609	B-4
C706	B-2		
C707	A-1	R701	A-1
C709	A-1	R702	A-1
C5501	C-1	R703	A-2
C5502	C-1	R706	A-2
C5503	B-3	R707	A-2
C5504	B-3	R709	B-2
C5505	A-4	R710	C-2
C5506	B-1	R711	A-1
C5507	B-1	R712	B-2
C5508	B-4	R713	A-1
C5509	B-3	R714	B-2
C5510	B-1	R715	A-2
C5511	C-1	R716	B-1
C5512	A-1	R717	A-1
C5513	A-1	R718	B-1
C5514	A-4	R5501	B-1
C5515	A-4	R5512	B-1
C5516	A-4	R5513	B-1
C5517	B-1	R5516	B-1
C5518	B-1	R5517	B-1
C5519	B-1	R5518	B-1
C5601	B-1	R5520	B-1
C5602	C-4	R5521	B-1
C5603	C-1	R5522	B-1
C5604	C-1	R5528	A-4
C5605	B-4	R5529	B-1
C5607	B-1	R5530	B-1
C5608	C-1	R5531	C-1
C5610	B-4	R5534	B-1
C5611	C-1	R5535	B-2
C5612	C-1	R5536	B-2
C5613	C-1	R5609	B-1
C5616	C-1	R5610	C-1
C5617	C-2	R5613	B-1
C5618	C-2	R5614	B-1
C5619	B-2	R5615	B-1
C5620	B-2	R5617	B-4
C5621	C-2	R5618	B-4
C5622	B-2	R5620	C-1
		R5621	C-1
CN701	A-3	R5622	C-1
CN702	A-3	R5623	C-1
CN5601	B-3	R5624	B-1
		R5625	C-1
D701	A-3	R5627	C-1
D5603	C-1	R5629	C-1
D5604	B-2	R5630	B-1
D5620	C-1	R5632	C-1
		R5633	C-1
IC701	A-2	R5634	C-1
IC5501	C-1	R5640	C-1
IC5502	B-4	R5641	C-1
IC5601	C-4	R5643	C-1
IC5602	C-1	R5644	C-1
		R5649	C-2
L701	A-2	R5651	B-2
L5501	B-4	R5652	B-2
L5502	A-1	R5653	B-2
L5601	B-1	R5654	B-2
L5603	C-4	R5655	C-2
L5604	B-2	R5657	B-3
L5605	C-1	R5685	C-2
		R5688	C-4
Q701	A-1		
Q702	A-2	S701	A-2
Q703	A-1	S702	C-2
Q5605	C-1	S703	B-2
Q5606	C-1	S704	B-2

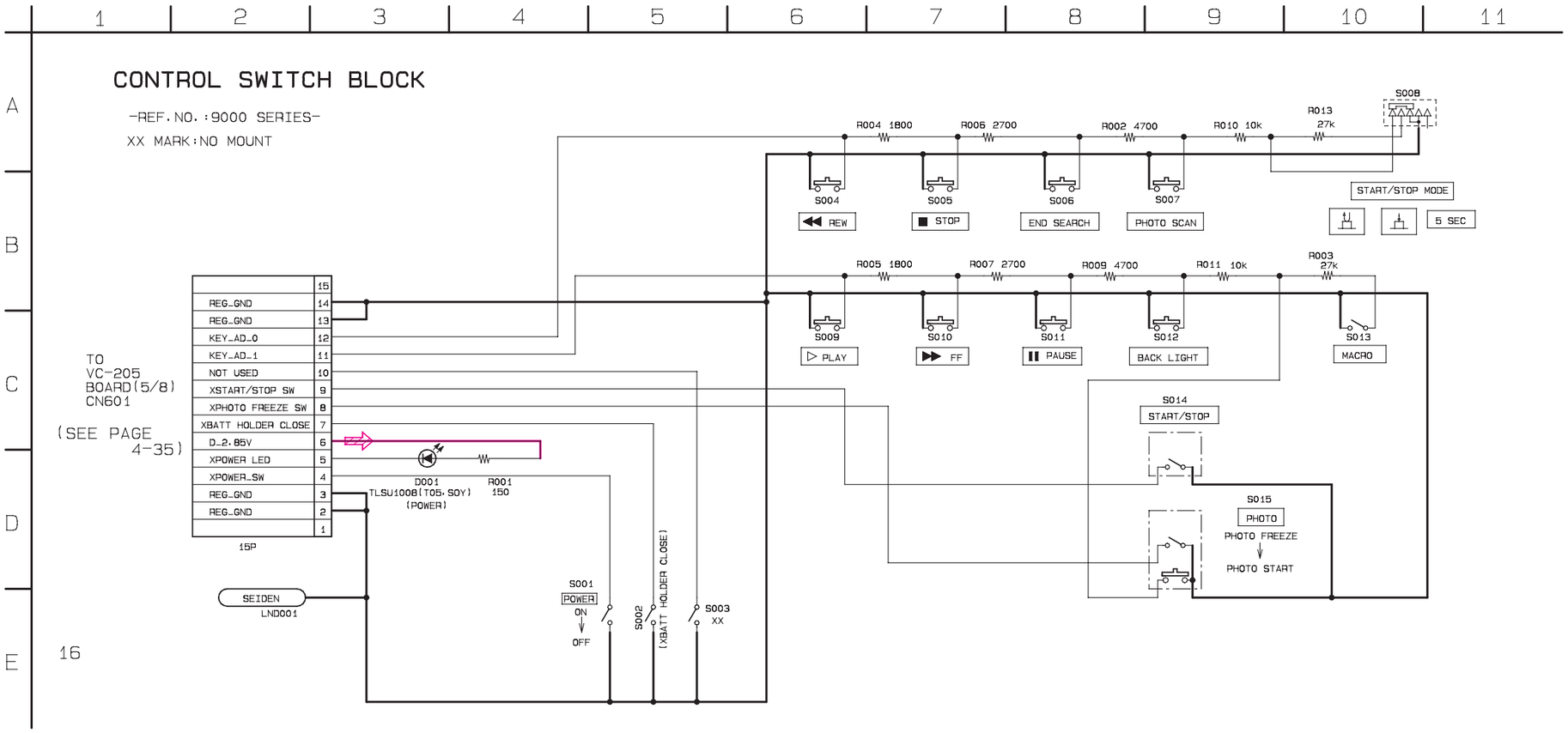
For printed wiring boards

- This board is six-layer print board. However, the patterns of layers two to five have not been included in the diagram.
- Chip parts



There are few cases that the part printed on this diagram isn't mounted in this model.





CONTORL SWITCH BLOCK
FK

SECTION 5
ADJUSTMENTS

5-1. CAMERA SECTION ADJUSTMENT

1-1. PREPARATIONS BEFORE ADJUSTMENT (CAMERA SECTION)

1-1-1. List of Service Tools

- Oscilloscope
- Color monitor
- Vectorscope
- Adjusting driver
- Regulated power supply
- Digital voltmeter

Ref. No.	Name	Parts Code	Usage
J-1	Filter for color temperature correction (C14)	J-6080-058-A	Auto white balance adjustment/check White balance adjustment/check
J-2	ND filter 1.0	J-6080-808-A	White balance check
	ND filter 0.3	J-6080-818-A	White balance check
J-3	Pattern box PTB-450	J-6082-200-A	
J-4	Color chart for pattern box	J-6020-250-A	
J-5	Adjustment remote commander (RM-95 remodeled partly) (Note 1)	J-6082-053-B	
J-6	Siemens star chart	J-6080-875-A	For checking the flange back
J-7	Clear chart for pattern box	J-6080-621-A	
J-8	CPC 11 jig	J-6082-425-A	For connecting the adjustment remote commander and the measuring instruments
J-9	Extension board	J-6082-426-A	For extension between the video cartridge and VC-205 board (CN101)
J-10	Power cord jig (Note 2)	J-6082-415-A	For connecting the regulated power supply and VC-205 board (CN801)

Note 1 : If the micro processor IC in the adjustment remote commander is not the new micro processor (UPD7503G-C56-12), the pages cannot be switched. In this case, replace with the new micro processor (8-759-148-35).

Note 2 : Set the regulated power supply output voltage to 3Vdc. If set the voltage to 4.2Vdc without connecting the adjustment remote commander, the power is shut off so that the unit cannot operate.

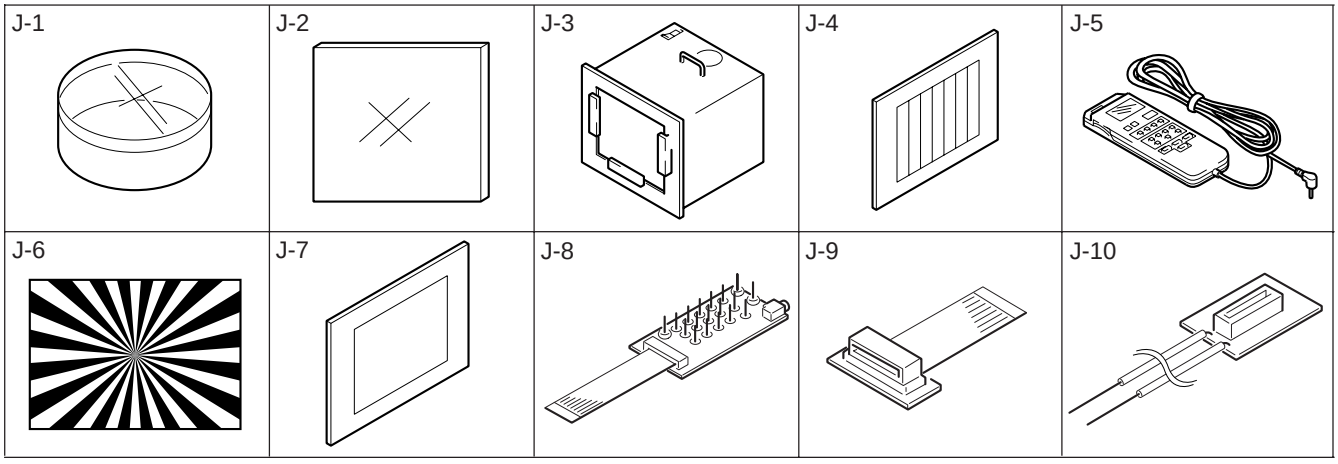


Fig. 5-1-1.

1-1-2. Preparations

Note 1: For details of how remove the cabinet and boards, refer to "2. DISASSEMBLY".

Note 2: When performing only the adjustments, the lens block and boards need not be disassembled.

Note 3: The video cartridge need not be installed.

1) Connect the equipment for adjustments according to Fig. 5-1-4.
2) Connect the adjustment remote commander to VC-205 board CN152 via CPC 11 jig (J-6082-425-A). (See Fig. 5-1-3.) To operate the adjustment remote commander, connect the DC input lands of CPC 11 jig to the DC power supply (6.0 to 7.2Vdc).

Note 4: Setting the "Forced Power ON" Mode
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 03, and press the PAUSE button of the adjustment remote commander.
The above procedure will enable the camera power to be turned on with the operation switch block removed (Don't disconnect the adjustment remote commander). After completing adjustments, be sure to exit the "Forced Power ON Mode".

Note 5: Exiting the "Forced Power ON" Mode
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 0, address: 01, and set data: 00.

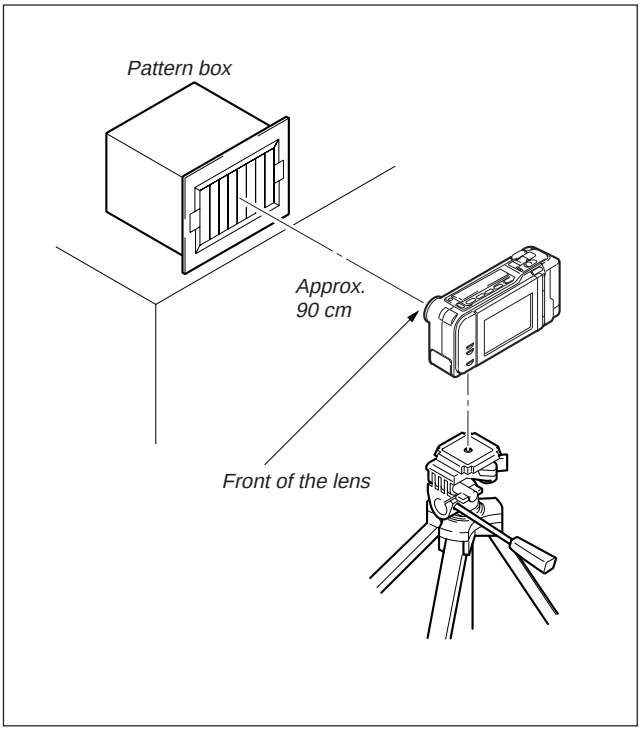


Fig. 5-1-2.

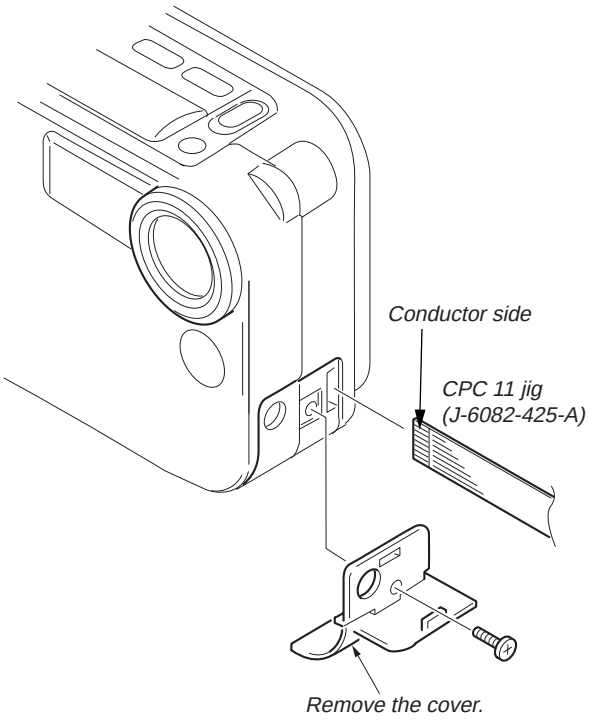


Fig. 5-1-3.

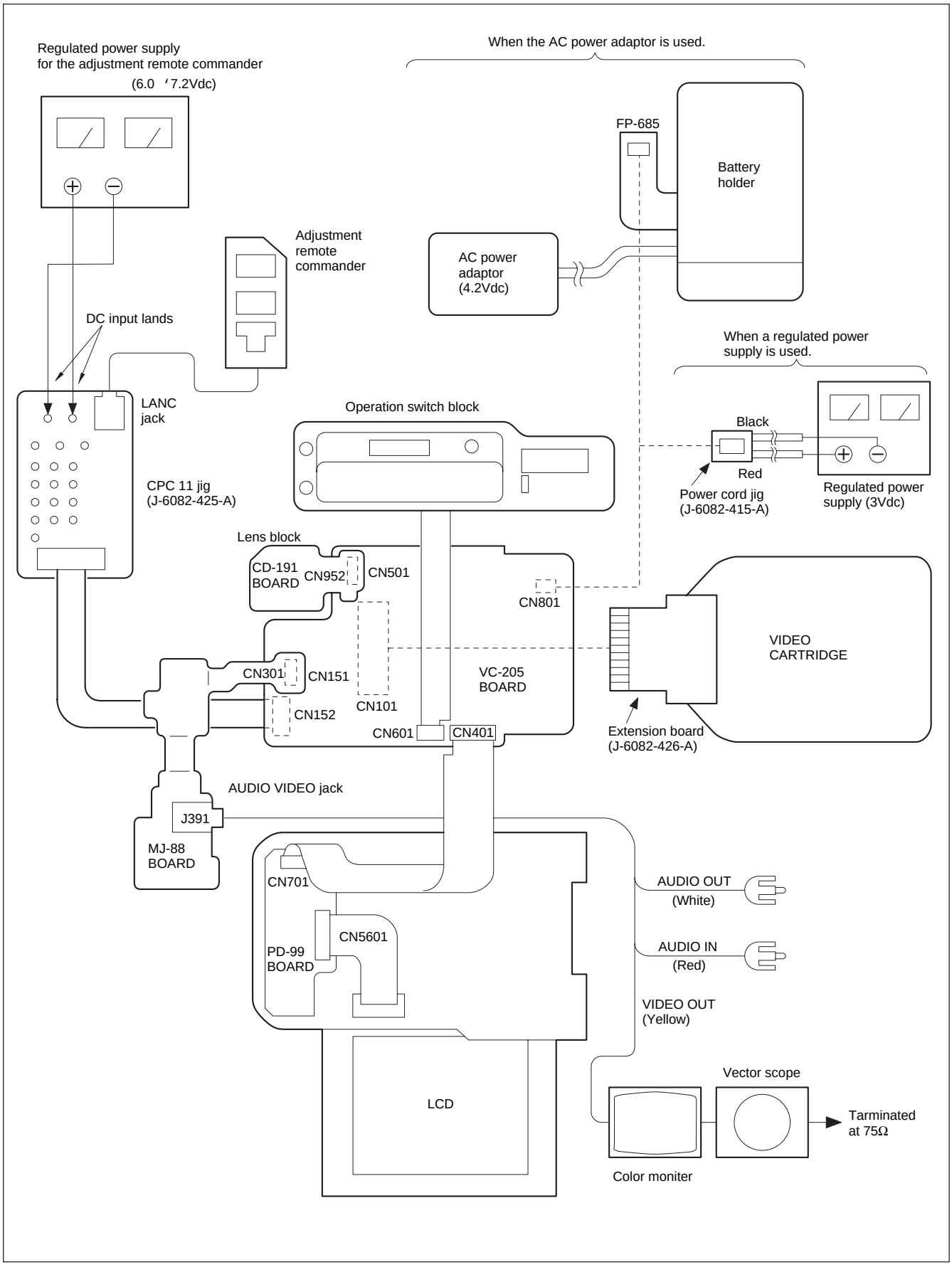

Regulated power supply
for the adjustment remote commander
(6.0 ‘7.2Vdc)
When the AC power adaptor is used.
FP-685
Battery holder
Adjustment remote commander
AC power adaptor (4.2Vdc)
DC input lands
When a regulated power supply is used.
LANC jack
Operation switch block
Black
Red
Power cord jig (J-6082-415-A)
Regulated power supply (3Vdc)
CPC 11 jig (J-6082-425-A)
Lens block
CD-191 BOARD
CN952
CN501
CN801
VIDEO CARTRIDGE
CN301
CN151
CN152
CN101
VC-205 BOARD
CN601
CN401
Extension board (J-6082-426-A)
AUDIO VIDEO jack
J391
MJ-88 BOARD
CN701
CN5601
PD-99 BOARD
AUDIO OUT (White)
AUDIO IN (Red)
VIDEO OUT (Yellow)
LCD
Vector scope
Tarminated at 75Ω
Color moniter

Fig. 5-1-4.

1-1-3. Precaution

1. Setting the Switch

Unless otherwise specified, set the switches as follows.

1. BACK LIGHT (FK block) ..... OFF
2. MACRO (FK block) ..... OFF

2. Adjusting Procedure

Adjust in the given order.

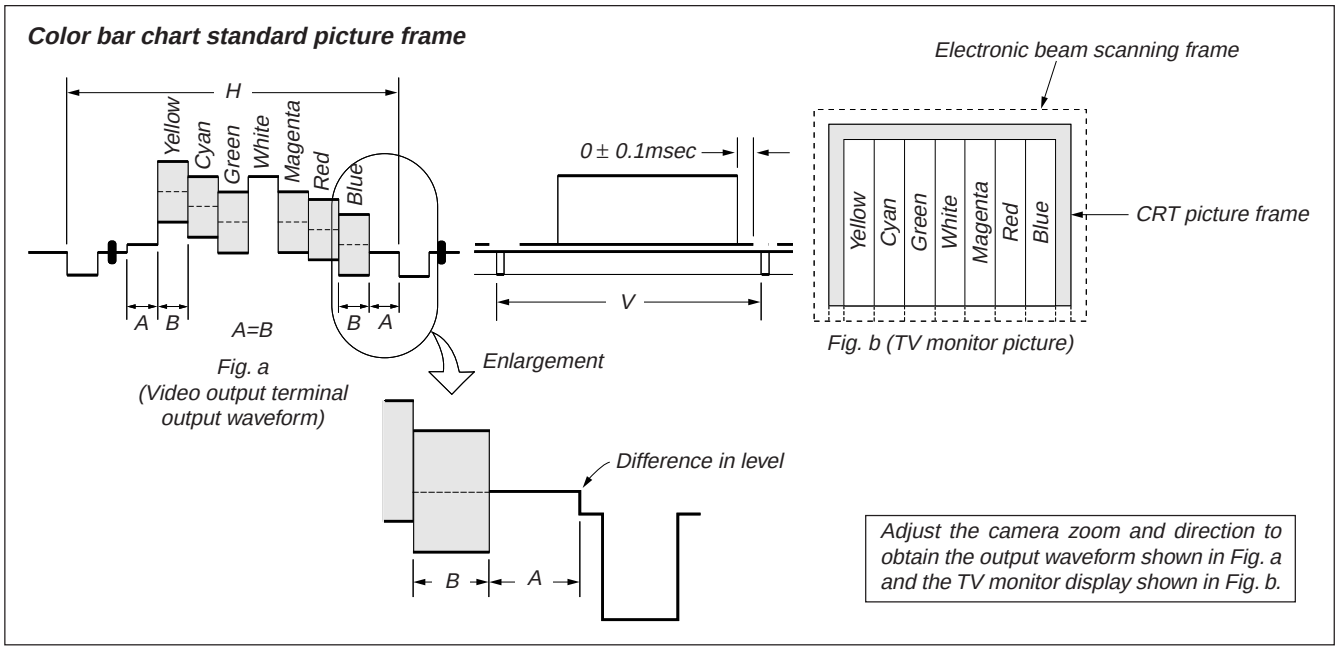


Fig. 5-1-5.

3. Subjects

1) Color bar chart (Standard picture frame).
   Adjust the picture frame as shown in Fig. 5-1-5. If adjustments are performed using the color bar chart. (Standard picture frame)
2) White pattern (Standard picture frame)
   Remove the color bar chart from the pattern box, and insert a clear chart in its place. (Do not perform zoom operations during this time.)

1-2. INITIALIZATION OF D, E, F PAGE DATA

1. Initializing the D,E,F Page Data

Note 1: If "Initializing the D,E,F Page Data" is performed, all data of the D page, E page and F page will be initialized. (It is impossible to initialize a single page.)

Note 2: If the D,E,F page data has been initialized, "Modification of D, E, F Page Data" and all adjustments need to be performed again.

Adjusting page	D
Adjusting Address	00 to 6F
Adjusting page	F
Adjusting Address	00 to FF
Adjusting page	E
Adjusting Address	00 to FF

Initializing Method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 2, address: 00, and set data: 55 (NTSC) or data: 51 (PAL).
3) Select page: 2, address: 01, set data: 55 (NTSC) or data: 51 (PAL), and press the PAUSE button of the adjustment remote commander.
4) Select page: 2, address: 02, and check that the data is "01".
5) Select page: 3, address: 00, and set data: 29.
6) Select page: 3, address: 01, set data: 29, and press the PAUSE button of the adjustment remote commander.
7) Select page: 0, address: 01, and set data: 00.
8) Perform "Modification of D,E,F Page Data".

2. Modification of D, E, F Page Data

If the D, E, F page data has been initialized, change the data of the "Fixed data-2" address shown in the following tables by manual input.

Modifying Method:

1) Before changing the data, select page: 0, address: 01, and set data: 01.
2) New data for changing are not shown in the tables because they are different in destination. When changing the data, copy the data built in the same model.
   Note : If copy the data built in the different model, the camcorder may not operate.
3) When changing the data, press the PAUSE button of the adjustment remote commander each time when setting new data to write the data in the non-volatile memory.
4) Check that the data of adjustment addresses is the initial value. If not, change the data to the initial value.
5) After changing the data, select page: 0, address: 01, and set data: 00. Also perform all adjustments.

3. D Page Table

Note: Fixed data-1 : Initialized data. (Refer to "1. Initializing the D,E,F Page Data".)
Fixed data-2 : Modified data. (Refer to "2. Modification of D, E, F Page Data".)

Address	Initial value		Remark
	NTSC	PAL	
00 to 0F			
10	00	00	Test mode
11			Fixed data-1 (Initialized data)
12			
13			
14			
15			
16			
17			
18			
19			
1A			
1B			
1C			
1D			
1E			
1F			Fixed data-2 (Modified data, copy the data built in the same model.)
20			Fixed data-1 (Initialized data)
21			
22			
23			
24			
25			
26			
27			
28			
29			
2A			
2B			
2C			
2D			
2E			
2F			
30	00	00	Dry battery down data check
31	71	71	
32	7D	7D	
33	83	83	
34	89	89	
35			Fixed data-1 (Initialized data)
36			
37			
38			
39			
3A			
3B			
3C			
3D			

Address	Initial value		Remark
	NTSC	PAL	
3E			Fixed data-1
3F			(Initialized data)
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
4A			
4B			
4C			
4D			
4E			
4F			
50			
51			
52			
53			
54			
55			
56			
57			
58			
59			
5A			
5B			
5C			
5D			
5E			
5F			
60			
61			
62			
63			
64			
65			
66			
67			
68			
69			
6A			
6B			
6C			
6D			
6E			
6F			

Table 5-1-1.

4. F Page table

Note: Fixed data-1 : Initialized data. (Refer to "1. Initializing the D,E,F Page Data".)
Fixed data-2 : Modified data. (Refer to "2. Modification of D, E, F Page Data".)

Address	Initial value		Remark
	NTSC	PAL	
00 to 0F			
10			Fixed data-1
11			(Initialized data)
12			
13			
14			
15			
16			
17			
18			
19			
1A			
1B			
1C			
1D			
1E			
1F			
20			
21			
22			
23			Fixed data-2 (Modified data, copy the data built in the same model.)
24			Fixed data-1
25			(Initialized data)
26			
27			
28			
29			
2A			
2B			
2C	77	77	28MHz origin osc. Adj.
2D			Fixed data-1
2E			
2F	96	96	Hall adj.
30	5F	5F	
31	40	40	Max gain adj.
32			Fixed data-1
33			
34	1B	1B	Color reproduction adj.
35			Fixed data-1
36	42	42	Color reproduction adj.
37			Fixed data-1
38			
39			
3A	89	89	Auto white balance adj.
3B	59	59	
3C	28	28	IRIS IN/OUT adj.
3D	2C	2C	
3E			Fixed data-1
3F			(Initialized data)

Address	Initial value		Remark
	NTSC	PAL	
40			Fixed data-1
41			(Initialized data)
42			
43			
44			
45	E0	E0	1.5MHz deviation adj.
46			Fixed data-1
47	80	80	BPF f_0 adj.
48			Fixed data-1
49	79	79	Y OUT level adj.
4A	75	75	AFC f_0 adj.
4B	BE	BE	C OUT level adj.
4C			Fixed data-2
4D			Fixed data-1
4E	49	49	RP filter f_0 adj.
4F			Fixed data-2
50			Fixed data-1
51			
52			
53			
54			
55	7C	7C	REC Y current adj.
56			Fixed data-1
57			
58			
59			
5A			
5B			
5C			
5D			
5E			
5F	A0	A0	REC L level adj.
60	A0	A0	
61			Fixed data-1
62			
63			
64			
65	94	94	REC C current adj.
66			Fixed data-1
67			
68			
69			
6A			
6B			
6C			
6D			
6E			
6F			
70	3B	3B	AWB standard data input adj.
71	FF	FF	
72	56	56	
73	7D	7D	
74			Fixed data-1
75			
76			
77			

Address	Initial value		Remark
	NTSC	PAL	
78			Fixed data-1
79			
7A			
7B			
7C			
7D			
7E			
7F			
80			
81			
82			
83			
84			Fixed data-2
85			
86			Fixed data-1
87			
88			
89			
8A			
8B			
8C			
8D			Fixed data-2
8E			Fixed data-1
8F			
90			
91			
92			
93			
94			
95			
96			
97			
98			
99			
9A			
9B			
9C			
9D			
9E			
9F			
A0			
A1			
A2			
A3			
A4			
A5			
A6			
A7			
A8			
A9			
AA			
AB			
AC			
AD			
AE			
AF			

Address	Initial value		Remark
	NTSC	PAL	
B0			Fixed data-1
B1			
B2			
B3			
B4			
B5			
B6			Fixed data-2
B7			
B8			Fixed data-1
B9			
BA			
BB			
BC			
BD			
BE			
BF			
C0			
C1			
C2			
C3			
C4			
C5			
C6			
C7			Fixed data-2
C8			Fixed data-1
C9			
CA			
CB			
CC			
CD			
CE			
CF			
D0			
D1			
D2			
D3			
D4			
D5			Fixed data-2
D6			Fixed data-1
D7			
D8			
D9			
DA			
DB			
DC			
DD			
DE			
DF			
E0			
E1			
E2			
E3			
E4			
E5			
E6			
E7			

Address	Initial value		Remark
	NTSC	PAL	
E8			Fixed data-1
E9			
EA			
EB			
EC			
ED			
EE			
EF			
F0			
F1			
F2			
F3			
F4			
F5	FE	FE	Color reproduction adj.
F6	F5	F5	
F7			Fixed data-1
F8			
F9			
FA			
FB			
FC			
FD			
FE			
FF			

Table 5-1-2.

5. E Page Table

Note: Fixed data-1 : Initialized data. (Refer to "1. Initializing the D,E,F Page Data".)
Fixed data-2 : Modified data. (Refer to "2. Modification of D, E, F Page Data".)

Address	Initial value		Remark
	NTSC	PAL	
00			Fixed data-1
01			(Initialized data)
02			
03			
04			
05			
06			
07			
08			
09			
0A			
0B			
0C			
0D			
0E			
0F			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
1A			
1B			
1C			
1D			
1E			
1F			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
2A			
2B			
2C			
2D			
2E			
2F			
30			
31			
32			
33			Fixed data-1
34			(Initialized data)
35			
36			
37			
38			
39			
3A			
3B			
3C			
3D			
3E			
3F			
40			
41			
42			
43			
44			
45			
46			
47			
48			
49			
4A			
4B			
4C			
4D			
4E			
4F			
50			
51			
52			
53			Fixed data-2
54			
55			Fixed data-1
56			
57			
58			
59			
5A			Fixed data-2
5B			Fixed data-1
5C			
5D			
5E			
5F			
60			
61			
62			
63			
64			
65			
66			
67			
68			
69			
6A			

Address	Initial value		Remark
	NTSC	PAL	
6B			Fixed data-1
6C			
6D			
6E			
6F			
70			
71			
72			
73			
74			
75			
76			
77			
78			
79			
7A			
7B			
7C			
7D			
7E			
7F			
80			
81			
82			
83			
84			
85			
86			
87			
88			
89			
8A			
8B			
8C			
8D			
8E			
8F			
90			
91			
92			
93			
94			
95			
96			
97			
98			
99			
9A			
9B			
9C			
9D			
9E			
9F			
A0			Fixed data-2
A1			Fixed data-1
A2			

Address	Initial value		Remark
	NTSC	PAL	
A3			Fixed data-1
A4			
A5			
A6			
A7			
A8			
A9			
AA			
AB			
AC			
AD			
AE			
AF			
B0			
B1			
B2			
B3			
B4			
B5			
B6			Fixed data-2
B7			Fixed data-1
B8			
B9			
BA			
BB			
BC			
BD			
BE			
BF			
C0			
C1			
C2	9C	9C	White balance adj.(LCD)
C3			Fixed data-1
C4			
C5			
C6			
C7			
C8	7D	7D	White balance adj.(LCD)
C9			Fixed data-1
CA			
CB			
CC			
CD			
CE			
CF	A1	A1	Bright adj.(LCD)
D0	82	82	Color adj.(LCD)
D1	9C	9C	White balance adj.(LCD)
D2	7D	7D	
D3	70	70	Contrast adj.(LCD)
D4	98	98	D range adj.(LCD)
D5	92	92	V-COM level adj.(LCD)
D6	8B	8B	VCO adj.(LCD)
D7	D5	D5	V-COM adj.(LCD)
D8			Fixed data-1
D9			
DA			

Address	Initial value		Remark
	NTSC	PAL	
DB			Fixed data-1
DC			
DD			
DE			
DF			
E0			
E1			
E2			
E3			
E4			
E5			
E6			
E7			
E8			
E9			
EA			
EB			
EC			
ED			
EE			
EF			
F0			
F1			
F2			
F3			
F4			
F5			
F6			Fixed data-2
F7			
F8			Fixed data-1
F9			
FA			
FB			
FC			
FD			
FE			
FF			

Table 5-1-3.

1-3. CAMERA SYSTEM ADJUSTMENTS

Before perform the camera system adjustments, Check that the specified value of "28MHz Origin Oscillation Adjustment", "Y OUT Level Adjustment" and "C OUT Level Adjustment" of "VIDEO SYSTEM ADJUSTMENTS" are satisfied.

1. HALL Adjustment

For detecting the position of the lens iris, adjust the hall AMP gain and offset.

Subject	Not required
Measurement Point	DDS display data of LCD or TV monitor (Note 3)
Measuring Instrument	
Adjustment Page	F
Adjustment Address	2F, 30
Specified Value	89 to 8D during IRIS OPEN (Note 1) 15 to 19 during IRIS CLOSE (Note 2)

Note 1: Select page: 2, address: 01, set data: 01, and press the PAUSE button of the adjustment remote commander.

Note 2: Select page: 2, address: 01, set data: 03, and press the PAUSE button of the adjustment remote commander.

Note 3: DDS display data of LCD or TV monitor.

00 00XX
└── Object data

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 0, address: 03, and set data: 03.
3) Select page: D, address: 11, set data: 02, and press the PAUSE button of the adjustment remote commander.
4) Select page: 2, address: 01, set data: 03, and press the PAUSE button.
5) Select page: F, address: 30, set data: 5F, and press the PAUSE button.
6) Select page: F, address: 2F, set data: 40, and press the PAUSE button.
7) Read the DDS display data (the lower two digits of the display data at the bottom right of the LCD display or the TV monitor), and this data is named K_2.
8) Select page: F, address: 2F, set data: 30, and press the PAUSE button.
9) Read the DDS display data, and this data is named K_1.
10) Select page: 2, address: 01, set data: 01, and press the PAUSE button.
11) Read the DDS display data, and this data is named W_1.
12) Select page: F, address: 2F, set data: 40, and press the PAUSE button.
13) Read the DDS display data, and this data is named W_2.
14) Convert W_1, W_2, K_1, K_2, to decimal notation, and obtain W_1' , W_2' , K_1' , K_2'. (Refer to Table 5-3-1. "Hexadecimal - decimal conversion table" of "5-3. Service Mode".)
15) Calculate X_1' using the following equations (decimal notation calculation).
$A' = W_2' + K_1' - W_1' - K_2'$ ..... Equation 1
$B' = W_1' - K_1'$ ..... Equation 2
$X_1' = [1856 + (48 \times A') - (16 \times B')]/A'$ ..... Equation 3
16) Convert X_1' to hexadecimal notation, and obtain X_1. (Round off to one decimal place)
17) Select page: F, address: 2F, set data: X_1, and press the PAUSE button.
18) Select page: 2, address: 01, set data: 01, and press the PAUSE button.
19) Select page: F, address: 30, change the data and adjust the DDS display data to "8B".
20) Press the PAUSE button of the adjustment remote commander.
21) Select page: 2, address: 01, set data: 03, and press the PAUSE button.
22) Read the DDS display data, and this data is named K_0. If K_0 lies within the "15" to "19" range, perform "Processing after completing adjustments". If it is lies outside the range, perform the following adjustments.
23) Convert K_0 to decimal notation, and obtain K_0'.
24) Calculate X_2' using the following equations (decimal notation calculation).
$C' = 139 - B' - K_0$ ..... Equation 4
$X_2' = [(116 - B') \times (X_1' - 48) + (48 \times C')]/C'$ ..... Equation 5
(X_1' and B' are values obtained from equations 2) and 3))
25) Convert X_2' to hexadecimal notation, and obtain X_2. (Round off to one decimal place)
26) Select page: F, address: 2F, set data: X_2, and press the PAUSE button.
27) Select page: 2, address: 01, set data: 03, and press the PAUSE button.
28) Select page: F, address: 30, change the data and adjust the DDS display data to "17".
29) Press the PAUSE button of the adjustment remote commander.
30) Select page: 2, address: 01, set data: 01, and press the PAUSE button.
31) Check the DDS display data lies within the "89" to "8D" range.

Processing after Completing Adjustments

1) Select page: D, address: 11, set data: 00, and press the PAUSE button.
2) Select page: 0, address: 01, and set data: 00.
3) Select page: 2, address: 01, set data: 00, and press the PAUSE button.
4) Select page: 0, address: 03, and set data: 00.

2. Flange Back Check

Subject	Siemens star chart (2.0 m from the front of the lens) (Luminance: approx. 200 lux)
Measurement Point	Check operation on TV monitor
Measuring Instrument	

Checking method:

1) Place the Siemens star 2.0m from the front of the lens.
2) To open the IRIS, decrease the luminous intensity to the Siemens star up to a point before noise appear on the image.
3) Shoot the Siemens star with the zoom TELE end.
4) Check that the lens is focused.
5) While observe the TV monitor, move the zoom lever to the WIDE end and check that the lens is focused.

3. Picture Frame Setting

Subject	Color bar chart standard picture frame (90cm from the front of the lens)
Measurement Point	Video output terminal
Measuring Instrument	Oscilloscope and TV monitor
Specified Value	A=B, C=D, t=0 ± 0.1msec

Setting method:

1) Adjust the zoom and the camera direction, and set to the specified position.
2) Mark the position of the picture frame on the monitor display, and adjust the picture frame to this position in following adjustments using “Color bar chart standard picture frame”.

Check on the oscilloscope

1. Horizontal period

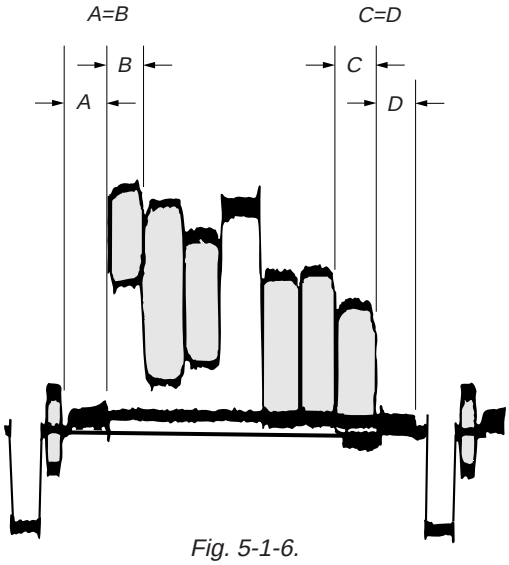


Fig. 5-1-6.

2. Vertical period

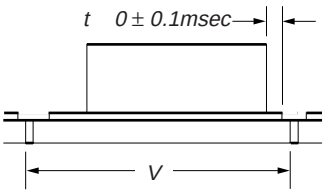


Fig. 5-1-7.

Color on the TV monitor

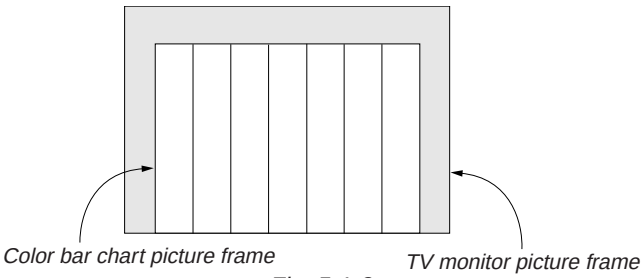


Fig. 5-1-8.

4. Color Reproduction Adjustment

Adjust the color Separation matrix coefficient so that proper color reproduction is produced.

Subject	Color bar chart standard picture frame
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Adjustment Page	F
Adjustment Address	34, 36, F5, F6
Specified Value	All color luminance points should settle within each color reproduction frame.

Note: NTSC model : CCD-CR1
PAL model : CCD-CR1E

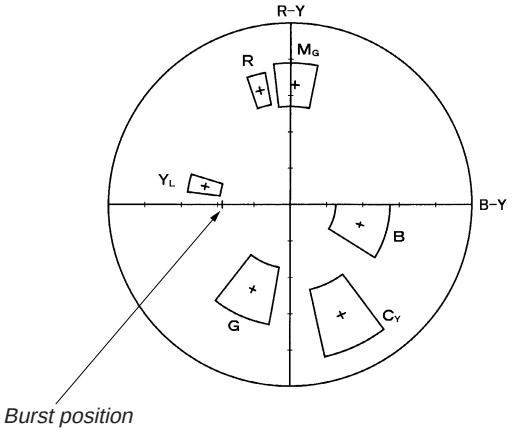
Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 2, address: 01, set data: 3D, and press the PAUSE button of the adjustment remote commander.
3) Select page: F, address: 25, set data: 3F, and press the PAUSE button of the adjustment remote commander.
4) Adjust the GAIN and PHASE of the vectorscope, and adjust the burst luminance point to the burst position of the color reproduction frame.
5) Change the data of page: F, address: 34, 36, F5 and F6, and settle each color luminance point in each color reproduction frame.
   Note: Be sure to press the PAUSE button of the adjustment remote commander before changing the addresses. If not, the new data will not be written to the memory.
6) Press the PAUSE button of the adjustment remote commander.

Processing after Completing Adjustments:

1) Select page: 2, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
2) Select page: 0, address: 01, and set data: 00.

For NTSC model



For PAL model

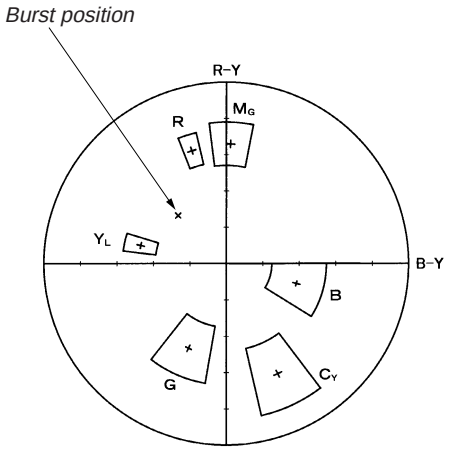


Fig. 5-1-9.

5. IRIS IN/OUT Adjustment

For the unit to judge if the white balance is indoors or outdoors in auto white balance operations, measure the light level and write it in the EEPROM.
If the level is not correct, the white balance will not be accurate.

Subject	Clear chart (Color bar standard picture frame)
Measurement Point	DDS display of LCD or TV monitor
Measuring Instrument	(Note 1)
Adjustment Page	F
Adjustment Address	3C, 3D

Note: The right four digits of the display data at the right bottom side of the LCD and TV monitor is the LIGHT LEVEL data.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 0, address: 03, and set data: 06.
3) Select page: D, address: 11, set data: 02, and press the PAUSE button of the adjustment remote commander.
4) Select page: 2, address: 01, set data: 0B, and press the PAUSE button of the adjustment remote commander.
5) Read the DDS display data (Note), and take the upper two digits as D_1 and the lower two as D_2.
6) Convert D_1 to decimal notation, and obtain D_1'. (Refer to Table 5-3-1. “Hexadecimal - decimal conversion table” of “5-3. Service Mode”.)
7) Calculate D_3' using the following equations. (Equations 1 and 2 are for decimal notation calculation).
   When $D_2 \geqq D0$
   $D_3' = D_1' - 21$ ..... Equation 1
   When $D_2 < D0$
   $D_3' = D_1' - 22$ ..... Equation 2
8) Convert D_3' to hexadecimal notation, and obtain D_3.
9) Select page: F, address: 3C, set data: D_3, and press the PAUSE button of the adjustment remote commander.
10) Select page: 2, address: 01, set data: 09, and press the PAUSE button of the adjustment remote commander.
11) Read the DDS display data (Note), and take the upper two digits as D_4 and the lower two as D_5.
12) Convert D_4 to decimal notation, and obtain D_4'. (Refer to Table 5-3-1. “Hexadecimal - decimal conversion table” of “5-3. Service Mode”.)
13) Calculate D_6' using the following equations. (Equations 3 and 4 are for decimal notation calculation).
   When $D_5 \geqq F0$
   $D_6' = D_4' - 13$ ..... Equation 3
   When $D_5 < F0$
   $D_6' = D_4' - 14$ ..... Equation 4
14) Convert D_6' to hexadecimal notation, and obtain D_6.
15) Select page: F, address: 3D, set data: D_6, and press the PAUSE button of the adjustment remote commander.

Processing after Completing Adjustments

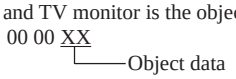
1) Select page: D, address: 11, set data: 00, and press the PAUSE button of the adjustment remote commander.
2) Select page: 0, address: 01, and set data: 00.
3) Select page: 2, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
4) Select page: 0, address: 03, and set data: 00.

6. MAX GAIN Adjustment

Setting the minimum illumination.
If it is not consistent, the image level required for taking subjects in low illuminance will not be produced (dark).

Subject	Clear chart (Color bar standard picture frame)
Measurement Point	DDS display of LCD or TV monitor
Measuring Instrument	(Note 1)
Adjustment Page	F
Adjustment Address	31
Specified Value	70 to FF

Note: The right two digits of the display data at the right bottom side of the LCD and TV monitor is the object data.



Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 11, set data: 02, and press the PAUSE button of the adjustment remote commander.
3) Select page: 0, address: 03, and set data: 01.
4) Select page: 2, address: 56, and set data: 40.
5) Select page: 2, address: 01, set data: 19 and press the PAUSE button of the adjustment remote commander.
6) Select page: F, address: 31, set data: 40 and press the PAUSE button of the adjustment remote commander.
7) Check that the DDS display data (Note) lies within the specified value.

Processing after Completing Adjustments:

1) Select page: D, address: 11, set data: 00, and press the PAUSE button of the adjustment remote commander.
2) Select page: 0, address: 01, and set data: 00.
3) Select page: 2, address: 01, set data: 00. and press the PAUSE button of the adjustment remote commander
4) Select page: 2, address: 56, and set data: 00.
5) Select page: 0, address: 03, and set data: 00.

7. Auto White Balance Standard Data Input

Subject	Clear chart (Color bar standard picture frame)
Adjustment Page	F
Adjustment Address	70 to 73

Note 1: Perform "Color Reproduction Adjustment" before this adjustment.
Note 2: Check that the data of page: 2, address: 02 is 00. If not, turn the power of the unit OFF/ON.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Wait for 2 seconds.
3) Select page: 2, address: 01, set data: 11, and press the PAUSE button of the adjustment remote commander.
4) Select page: 2, address: 01, set data: 0D, and press the PAUSE button of the adjustment remote commander.
   (When the standard data is take in, the data will be automatically input to page: F, address: 70 to 73)
5) Select page: 2, address: 02, and check that the data is "01".
6) Perform "Auto White Balance Adjustment".

Processing after Completing Adjustments:

1) Select page: 2, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
2) Select page: 0, address: 01, and set data: 00.

8. Auto White Balance Adjustment

Adjust to the proper auto white balance output data.
If it is not correct, auto white balance and color reproducibility will be poor.

Subject	Clear chart (Color bar standard picture frame)
Filter	Filter C14 for color temperature correction
Measurement Point	DDS display of LCD or TV monitor
Measuring Instrument	(Note 2)
Adjustment Page	F
Adjustment Address	3A, 3B
Specified Value	NTSC model R ratio: 2A40 to 2AC0 B ratio: 5E40 to 5EC0 PAL model R ratio: 2B40 to 2BC0 B ratio: 5E40 to 5EC0

Note 1: Perform "Auto White Balance Standard Data Input" before this adjustment.
Note 2: The right four digits of the display data at the right bottom side of the LCD and TV monitor is the object data.

00 XXXX
└── Object data

Adjusting method:

1) Place the C14 filter for color temperature correction on the lens.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: D, address: 11, set data: 02, and press the PAUSE button of the adjustment remote commander.
4) Select page: 2, address: 01, set data: 3F, and press the PAUSE button of the adjustment remote commander.
5) Select page: 0, address: 03, and set data: 04.
6) Select page: F, address: 3A, change the data and adjust the average value of the DDS display data (Note 2) to the R ratio specified value.
7) Press the PAUSE button of the adjustment remote commander.
8) Select page: 0, address: 03, and set data: 05.
9) Select page: F, address: 3B, change the data and adjust the average value of the DDS display data (Note 2) to the B ratio specified value.
10) Press the PAUSE button of the adjustment remote commander.

Processing after Completing Adjustments:

1) Select page: D, address: 11, set data: 00, and press the PAUSE button of the adjustment remote commander.
2) Select page: 0, address: 01, and set data: 00.
3) Select page: 2, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
4) Select page: 0, address: 03, and set data: 00.

9. White Balance Check

Subject	Clear chart (Color bar standard picture frame)
Filter	Filter C14 for color temperature correction ND filter 1.0 and 0.3
Measurement Point	Video output terminal
Measuring Instrument	Vectorscope
Specified Value	Fig. 5-1-10. (A) to (C)

Checking method:

1) Check that the lens is not covered with either filter.
2) Select page: 2, address: 01, set data: 0F, and press the PAUSE button of the adjustment remote commander.
3) Check that the center of the white luminance point is within the circle shown Fig. 5-1-10. (A).
4) Select page: 2, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
5) Select page: 2, address: 01, set data: 23, and press the PAUSE button of the adjustment remote commander.
6) Place the C14 filter on the lens.
7) Check that the center of the white luminance point settles in the circle shown Fig. 5-1-10. (B).
8) Remove the C14 filter, and place the ND filter 1.3 (1.0 + 0.3) on the lens.
9) Check that the white luminance point stopped moving, and then remove the ND filter 1.3.
10) Check that the center of the white luminance point settles within the circle shown Fig. 5-1-10. (C).

Processing after Completing Adjustments:

1) Select page: 2, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.

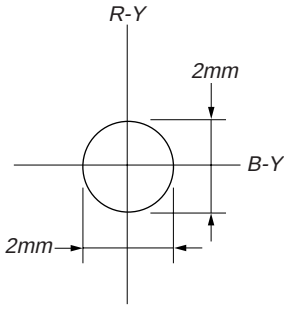


Fig. 5-1-10. (A)

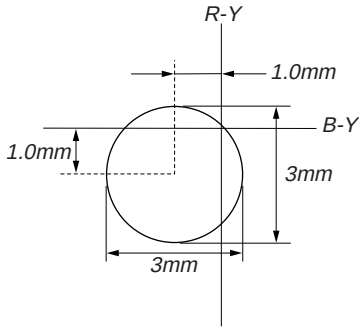


Fig. 5-1-10. (B)

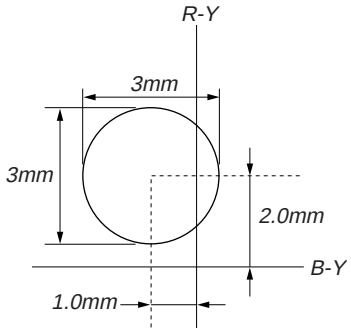


Fig. 5-1-10. (C)

1-4. LCD SYSTEM ADJUSTMENT

Note: When replacing the LCD unit, be careful to prevent damages caused by static electricity.

[Adjusting connector]

Most of the measuring points for adjusting the LCD display are concentrated in CN152 of the VC-205 board.

Connect the Measuring Instruments and adjustment remote commander via the CPC 11 jig (J-6082-425-A). To operate the adjustment remote commander, connect the DC input lands of CPC 11 jig to the DC power supply (6.0 to 7.2Vdc).

The following table shows the Pin No. and signal name of the connector.

Pin No.	Signal name
1	LANC OUT
2	PANEL Y
3	LANC IN
4	AFC F0
5	REC RF
6	PB RF
7	RF AGC IN
8	REG GND
9	RF AGC OUT
10	BPF MONI
11	RF SWP
12	PANEL H START
13	PANEL VR
14	PANEL COM
15	PANEL VB
16	PANEL VG

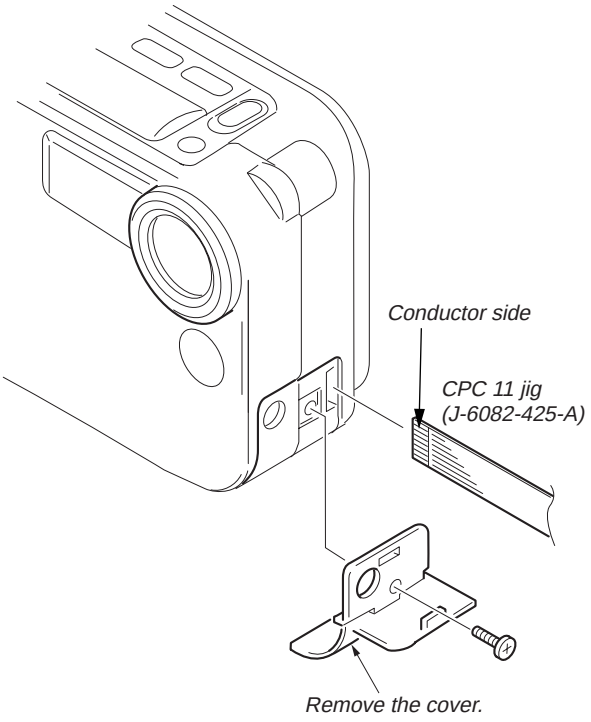


Fig. 5-1-11.

1. LCD Initial Data Input

Mode	Standby
Subject	Arbitrary
Adjustment Page	E
Adjustment Address	A5 to A7, AE to B8, C0 to CD, CF to D8

Adjusting method:

1) Select page: 0, address:01, and set data: 01.
2) Select page: E, and input the data in the following table.
   Note: To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjustment remote commander each time to set the data.
3) Select page: 0, address:01, and set data: 00.

Address	Data		Remark
	NTSC	PAL	
A5	60	60	Fixed value
A6	AC	AC	Fixed value
A7	AA	AA	Fixed value
AE	00	00	Fixed value
AF	C8	C8	Fixed value
B0	3F	3F	Fixed value
B1	C8	C8	Fixed value
B2	1F	1F	Fixed value
B3	1F	1F	Fixed value
B4	00	00	Fixed value
B5	00	00	Fixed value
B6	F0	D0	Fixed value
B7	4E	4E	Fixed value
B8	08	08	Fixed value
C0	53	53	Fixed value
C1	03	03	Fixed value
C2	9C	9C	White balance adj.
C3	32	32	Fixed value
C4	01	01	Fixed value
C5	02	02	Fixed value
C6	01	01	Fixed value
C7	01	01	Fixed value
C8	7D	7D	White balance adj.
C9	42	42	Fixed value
CA	01	01	Fixed value
CB	01	01	Fixed value
CC	01	01	Fixed value
CD	02	02	Fixed value
CF	A1	A1	Bright adj.
D0	82	82	Color adj.
D1	9C	9C	White balance adj.
D2	7D	7D	White balance adj.
D3	70	70	Contrast adj.
D4	98	98	D range adj.
D5	92	92	V-COM level adj.
D6	8B	8B	VCO adj.
D7	D5	D5	V-COM adj.
D8	80	80	Fixed value

2. VCO Adjustment (PD-99 Board)

Set the VCO free-run frequency. If deviated, the EVF screen will be blurred.

Mode	Standby
Subject	Arbitrary
Measurement Point	Pin ⑫ of CN152 (PANEL H START) of VC-205 board
Measuring Instrument	Frequency counter
Adjustment Page	E
Adjustment Address	D6
Specified Value	f = 15734 ± 30Hz (NTSC) f = 15625 ± 30Hz (PAL)

Note 1: NTSC model : CCD-CR1
PAL model : CCD-CR1E

Note 2: The power supply voltage should be 4.2Vdc.
(Use the AC power adapter or adjust the regulated power supply output voltage to 4.2Vdc.)

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 01, set data: 5D, and press the PAUSE button of the adjustment remote commander.
3) Select page: 2, address: 7D, and set data: 01.
4) Select page: E, address: D6, change the data and set the frequency (f) to the specified value.
5) Press the PAUSE button of the adjustment remote commander.
6) Select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
7) Select page: 2, address: 7D, and set data: 00.
8) Select page: 0, address: 01, and set data: 00.

3. D range Adjustment (PD-99 Board)

Set the D range of the RGB decoder used to drive the LCD to the specified value. If deviated, the LCD screen will become blackish or saturated (whitish).

Mode	Standby
Subject	Arbitrary
Measurement Point	Pin ⑯ of CN152 (PANEL VG) of VC-205 board External trigger : Pin ⑭ of CN152 (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	D4
Specified Value	A = 3.30 ± 0.05V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 01, set data: 55, and press the PAUSE button of the adjustment remote commander.
3) Select page: 2, address: 7D, and set data: 00.
4) Select page: E, address: D4, change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
5) Press the PAUSE button of the adjustment remote commander.
6) Select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
7) Select page: 0, address: 01, and set data: 00.

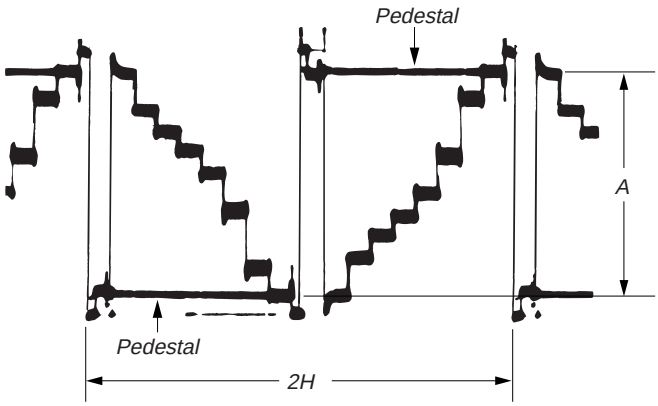


Fig. 5-1-13.

4. Bright Adjustment (PD-99 Board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	Standby
Subject	Arbitrary
Measurement Point	Pin ⑯ of CN152 (PANEL VG) of VC-205 board External trigger : Pin ⑭ of CN152 (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	CF
Specified Value	A = 1.90 ± 0.05V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 01, set data: 55, and press the PAUSE button of the adjustment remote commander.
3) Select page: 2, address: 7D, and set data: 40.
4) Select page: E, address: CF, change the data and set the voltage (A) between the pedestal and while to the specified value. (The data of address: CF should be “9F” to “BF”.)
5) Press the PAUSE button of the adjustment remote commander.
6) Select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
7) Select page: 2, address: 7D, and set data: 00.
8) Select page: 0, address: 01, and set data: 00.
9) Perform “Contrast Adjustment”.

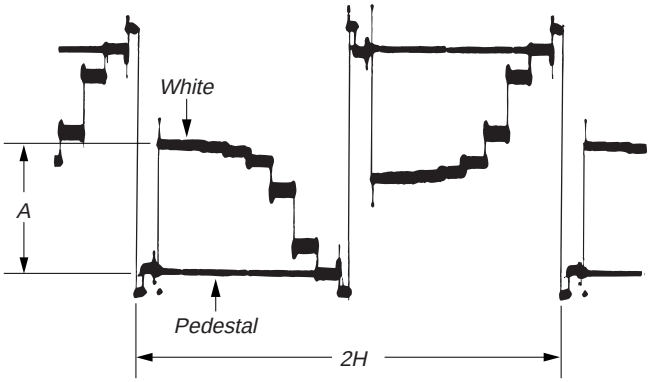


Fig. 5-1-14.

5. Contrast Adjustment (PD-99 Board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen image will be blackish or saturated (whitish).

Mode	Standby
Subject	Arbitrary
Measurement Point	Pin ⑯ of CN152 (PANEL VG) of VC-205 board External trigger : Pin ⑭ of CN152 (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	D3
Specified Value	A = 3.30 ± 0.05V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 01, set data: 55, and press the PAUSE button of the adjustment remote commander.
3) Select page: 2, address: 7D, and set data: 00.
4) Select page: E, address: D3, change the data and set the voltage (A) between the pedestal (0 IRE) and 100 IRE to the specified value.
5) Press the PAUSE button of the adjustment remote commander.
6) Select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
7) Select page: 0, address: 01, and set data: 00.
8) Check that the specified value of “Bright Adjustment” is satisfied. If not, perform the adjustment”.

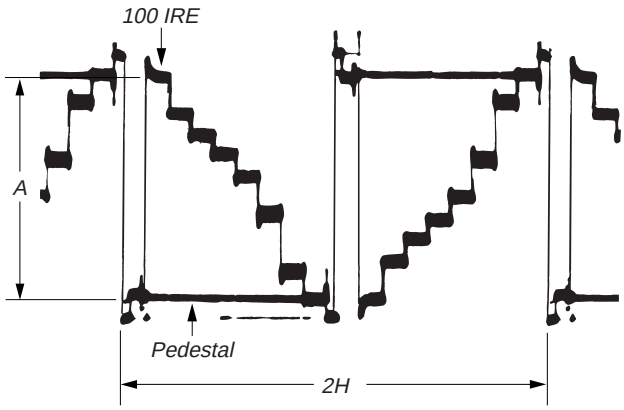


Fig. 5-1-15.

6. V-COM Level Adjustment (PD-99 Board)

Set the common electrode drive signal level of LCD to the specified value.

Mode	Standby
Subject	Arbitrary
Measurement Point	Pin ⑭ of CN152 (PANEL COM) of VC-205 board
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	D5
Specified Value	A = 7.00 ± 0.05V

Note: Perform "Bright Adjustment" and "Contrast Adjustment" before this adjustment.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 01, set data: 55, and press the PAUSE button of the adjustment remote commander.
3) Select page: 2, address: 7D, and set data: 00.
4) Select page: E, address: D5, change the data and set the PANEL COM signal level (A) to the specified value.
5) Press the PAUSE button of the adjustment remote commander.
6) Select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
7) Select page: 0, address: 01, and set data: 00.

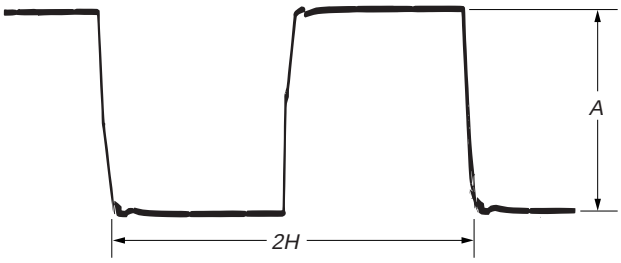


Fig. 5-1-16.

7. Color Adjustment (PD-99 Board)

Set the color saturation to the standard value. If deviated, the color will be to dark or light.

Mode	Standby
Subject	Arbitrary
Measurement Point	Pin ⑯ of CN152 (PANEL VG) of VC-205 board External trigger : Pin ⑭ of CN152 (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	D0
Specified Value	A = 0.30 ± 0.05V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 01, set data: 57, and press the PAUSE button of the adjustment remote commander.
3) Select page: 2, address: 7D, and set data: 20.
4) Select page: E, address: D0, change the data and set the voltage (A) between the green and white to the specified value.
5) Press the PAUSE button of the adjustment remote commander.
6) Select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
7) Select page: 2, address: 7D, and set data: 00.
8) Select page: 0, address: 01, and set data: 00.

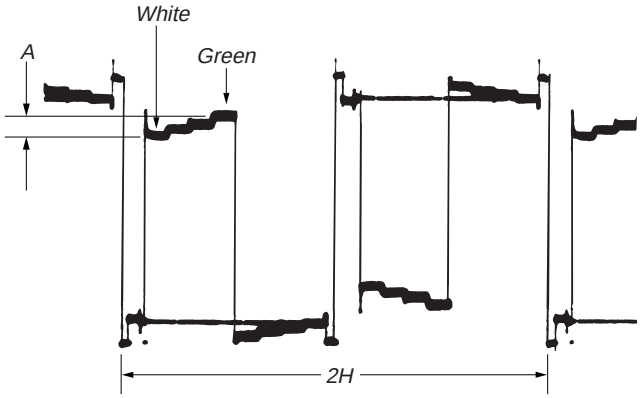


Fig. 5-1-17.

8. V-COM Adjustment (PD-99 Board)

Set the DC bias of the common electrode drive signal of LCD to the specified value.
If deviated, the LCD display will move, producing flicker and conspicuous vertical lines.

Mode	Standby
Subject	Arbitrary
Measurement Point	Check on LCD display
Measuring Instrument	
Adjustment Page	E
Adjustment Address	D7
Specified Value	The brightness difference between the section Ⓐ and section Ⓑ is minimum.

Note: Perform "Bright Adjustment" and "Contrast Adjustment" before this adjustment.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 01, set data: 51, and press the PAUSE button of the adjustment remote commander.
3) Select page: 2, address: 7D, and set data: 87.
4) Select page: E, address: D7, change the data so that the brightness of the section A and that of the section B is equal.
5) Press the PAUSE button of the adjustment remote commander.
6) Select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
7) Select page: 2, address: 7D, and set data: 00.
8) Select page: 0, address: 01, and set data: 00.

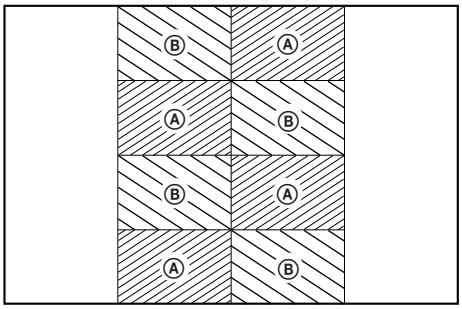


Fig. 5-1-18.

9. White Balance Adjustment

Correct the white balance.
If deviated, the LCD screen color cannot be reproduced.

9-1. PANEL VR Adjustment (PD-99 Board)

Mode	Standby
Subject	Arbitrary
Measurement Point	Pin ⑬ of CN152 (PANEL VR) of VC-205 board External trigger : Pin ⑭ of CN205 (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	C2, D1
Specified Value	A=3.30 ± 0.05V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 01, set data: 55, and press the PAUSE button of the adjustment remote commander.
3) Select page: 2, address: 7D, and set data: 00.
4) Select page: E, address: D1, change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
5) Press the PAUSE button of the adjustment remote commander.
6) Select page: E, address: C2, set the same data as page: E, address: D1 and press the PAUSE button of the adjustment remote commander.
7) Perform "PANEL VB Adjustment".

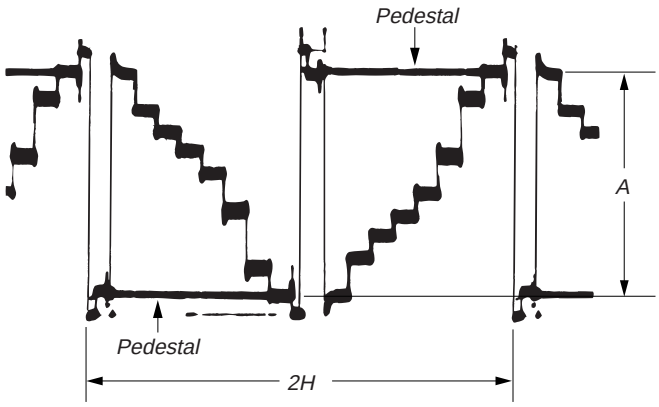


Fig. 5-1-19.

9-2. PANEL VB Adjustment (PD-99 Board)

Mode	Standby
Subject	Arbitrary
Measurement Point	Pin ⑮ of CN152 (PANEL VB) of VC-205 board External trigger : Pin ⑭ of CN205 (PANEL COM)
Measuring Instrument	Oscilloscope
Adjustment Page	E
Adjustment Address	C8, D2
Specified Value	A=3.30 ± 0.05V

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 01, set data: 55, and press the PAUSE button of the adjustment remote commander.
3) Select page: 2, address: 7D, and set data: 00.
4) Select page: E, address: D2, change the data and set the voltage (A) between the reversed waveform pedestal and non-reversed waveform pedestal to the specified value.
5) Press the PAUSE button of the adjustment remote commander.
6) Select page: E, address: C8, set the same data as page: E, address: D2 and press the PAUSE button of the adjusting remote commander.
7) Select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
8) Select page: 0, address: 01, and set data: 00.

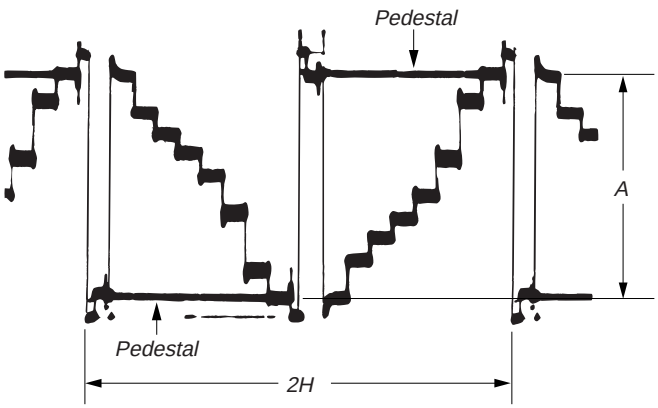


Fig. 5-1-20.

10. BRIGHT Check/Adjustment (PD-99 Board)

Mode	Standby
Subject	Arbitrary
Measurement Point	Check on the LCD screen
Measuring Instrument	
Adjustment Page	E
Adjustment Address	CF
Specified Value	0 IRE section and 10 IRE section can be differentiated, and 90 IRE section and 100 IRE section can be differentiated

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 3, address: 01, set data: 55, and press the PAUSE button of the adjustment remote commander.
3) Select page: 2, address: 7D, and set data: 00.
4) Check that the 0 IRE section and 10 IRE section can be differentiated. If not, select page: E, address: CF, add 2 to the data and press the PAUSE button.
   (The data of address: CF should be “9F” to “BF”.)
5) Check that the 90 IRE section and 100 IRE section can be differentiated. If not, select page: E, address: CF, subtract 2 from the data and press the PAUSE button.
   (The data of address: CF should be “9F” to “BF”.)
6) Repeat step 4) to step 5).
7) Select page: 3, address: 01, set data: 00, and press the PAUSE button.
8) Select page: 0, address: 01, and set data: 00.

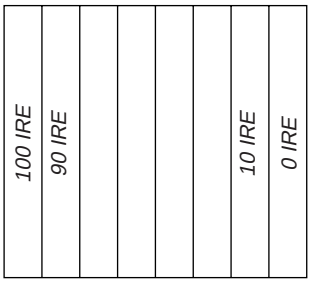


Fig. 5-1-21.

5-2. VIDEO SECTION ADJUSTMENTS

When performing adjustments, refer to the layout diagrams for adjustment related parts beginning from page 5-36.

2-1. PREPARATIONS BEFORE ADJUSTMENT

The following adjusting instruments are used for adjusting video section.

2-1-1. Equipment to be Used

1) TV monitor
2) Oscilloscope: 2 phenomena, band 30MHz or wider, with delay mode. (Use a 10:1 probe unless specified otherwise.)
3) Frequency counter
4) Digital voltmeter
5) Audio generator
6) Audio level meter
7) Audio distortion meter
8) Audio attenuator
9) Regulated power supply
10) Adjustment remote commander (J-6082-053-B)
11) CPC 11 jig (J-6082-425-A)
    For connecting the adjustment remote commander and the measuring instruments
12) Extension board (J-6082-426-A)
    For extension between the video cartridge and VC-205 board (CN101)
13) Power cord jig (J-6082-415-A) Note1
    For connecting the regulated power supply and VC-205 board (CN801)

Note: Set the regulated power supply output voltage to 3Vdc. If set the voltage to 4.2Vdc without connecting the adjustment remote commander, the power is shut off so that the unit cannot operate.

2-1-2. Precautions on Adjusting

1) The video cartridge need not be installed except for the audio system adjustment.
2) When connect the regulated power supply to the battery terminal of the unit, set the regulated power supply output voltage to 3Vdc. If set the voltage to 4.2Vdc without connecting the adjustment remote commander, the power is shut off so that the unit cannot operate.
3) Connect the Adjustment remote commander to VC-205 board CN152 via CPC 11 jig (J-6082-425-A). (Refer to "2-1-3. Adjusting Connectors".)
4) The LCD block (PD-99 board) need not be connected. To remove, disconnect the following connectors.
   VC-205 board CN401 (33P, 0.3mm)
5) The lens block (CD-191 board) need not be connected. To remove, disconnect the following connectors.
   VC-205 board CN501 (30P, 0.5mm)
6) By setting the "Forced Power ON mode", the video section can be operate even if the operation switch block (FK block) has been removed. When removing the operation switch block disconnect the following connector.
   VC-205 board CN601 (15P 0.3mm)

Note 1: Setting the "Forced Power ON" mode
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 03, and press the PAUSE button of the adjustment remote commander.
   The above procedure will enable the VTR power to be turned on with the operation switch block removed (Don't disconnect the adjustment remote commander).
   After completing adjustments, be sure to exit the "Forced Power ON mode".

Note 2: Exiting the "Forced Power ON" mode
1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
3) Select page: 0, address: 01, and set data: 00.

2-1-3. Adjusting Connectors

Some of the adjusting points of the video section are concentrated at VC-205 board CN152. Connect the measuring instruments and adjustment remote commander via the CPC 11 jig (J-6082-425-A). To operate the adjustment remote commander, connect the DC input lands of CPC 11 jig to the DC power supply (6.0 to 7.2Vdc).
The following table lists the pin numbers and signal names of CN152.

Pin No.	Signal name
1	LANC OUT
2	PANEL Y
3	LANC IN
4	AFC F0
5	REC RF
6	PB RF
7	RF AGC IN
8	REG GND
9	RF AGC OUT
10	BPF MONI
11	RF SWP
12	PANEL H START
13	PANEL VR
14	PANEL COM
15	PANEL VB
16	PANEL VG

Table 5-2-1.

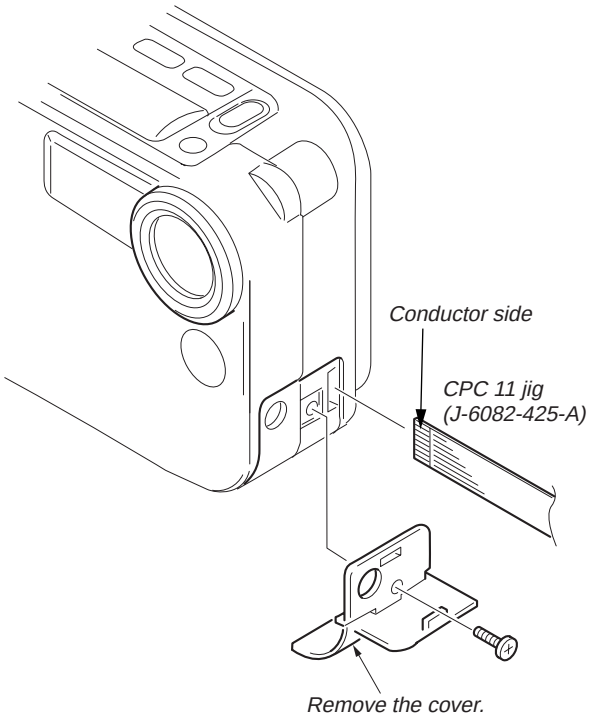


Fig 5-2-1.

2-1-4. Connecting the Equipment

Connect the measuring instruments as shown in Fig. 5-2-2, and perform the adjustments.

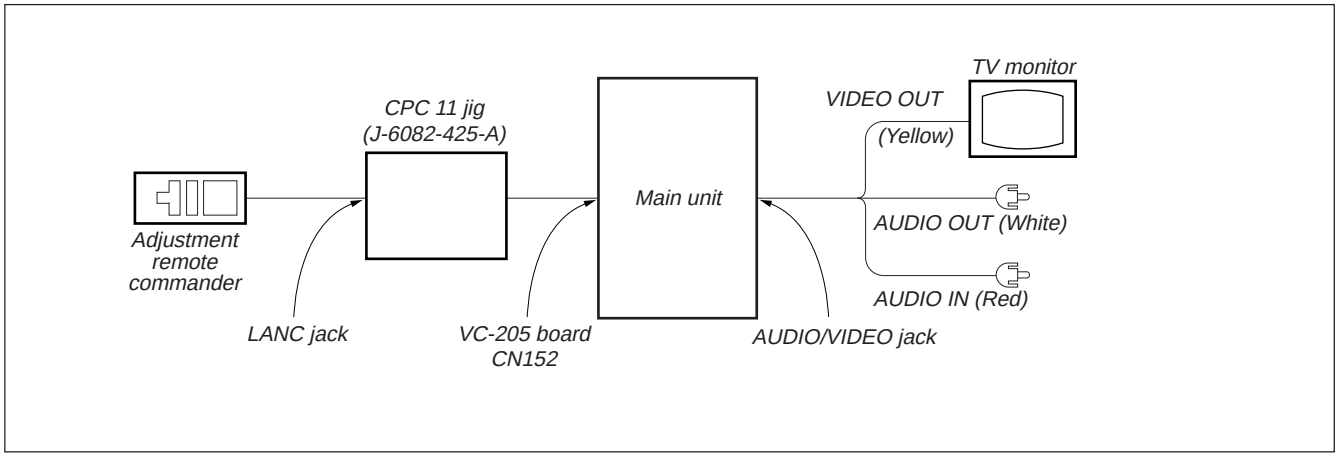


Fig. 5-2-2

2-1-5. Output Level and Impedance

Video output

Special stereo mini jack

Video signal : 1Vp-p, 75 Ω unbalanced, sync negative

Audio signal : 327mV (at load impedance 47kΩ), Output impedance: 2.2kΩ or less

2-2. SYSTEM CONTROL SYSTEM ADJUSTMENT

1. Initialization of D, E, F Page Data

If the D, E, F page data is erased due to some reason, perform "1-2. INITIALIZATION OF D, E, F PAGE DATA", of "5-1. CAMERA SECTION ADJUSTMENT"

2. Dry Battery Down Data Check (VC-205 board)

Set the dry battery end voltage.
If the voltage is incorrect, the life of the battery will shorten.
The image at the battery end will also be rough.

Note : Battery down adjustment of this unit is not required, and the adjustment data are fixed value.

Mode	Standby
Subject	Arbitrary
Adjustment Page	D
Adjustment Address	30 to 34

Checking method:

1) Check that the data of page: F, address: 30 to 34 is correct (See table below).

Address	Data
30	00
31	71
32	7D
33	83
34	89

2-3. VIDEO SYSTEM ADJUSTMENTS

Video system adjustments must be performed in the following order.

[Adjusting Order]

1. 28MHz origin oscillation adjustment
2. AFC f_0 adjustment
3. Y OUT level adjustment
4. C OUT level adjustment
5. RP filter f_0 adjustment
6. REC Y current adjustment
7. REC L level adjustment
8. REC C current adjustment

1. 28 MHz Origin Oscillation Adjustment (VC-205 Board)

Set the frequency of the clock for synchronization.
If deviated, the synchronization will be disrupted and the color will become inconsistent.

Mode	Standby
Subject	Arbitrary
Measurement Point	Pin ⑤⓪ of IC204 (CL) or Pin ⑬ of CN151 (FSC)
Measuring Instrument	Frequency counter
Adjustment Page	F
Adjustment Address	2C
Specified Value	Pin ⑬ of CN151: f=3579545 ± 17Hz (NTSC) f=4433593.75 ± 17Hz (PAL) Pin ⑤⓪ of IC204: f=14318181 ± 68Hz (NTSC) f=14187500 ± 55Hz (PAL)

Note: NTSC MODEL : CCD-CR1
PAL MODEL : CCD-CR1E

Adjusting Method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 02, and press the PAUSE button of the adjustment remote commander.
3) Select page: 2, address: 61, and set data: 30.
4) Select page: F, address: 2C, change the data and set the clock frequency(f) to the specified value.
5) Press the PAUSE button of the adjustment remote commander.
6) Select page: 2, address: 61, and set data: 00.
7) Select page: D, address: 10, set data: 00, and press the PAUSE button of the adjustment remote commander.
8) Select page: 0, address: 01, and set data: 00.

2. AFC f0 Adjustment (VC-205 Board)

Adjust the pull-in range of the A/D converted clock generator during playback.

Mode	Standby
Subject	Arbitrary
Measurement Point	Pin ④ of CN152 (AFC F0)
Measuring Instrument	Digital voltmeter
Adjustment Page	F
Adjustment Address	4A
Specified Value	A=1.98 ± 0.05Vdc

Note : Insert the plug in to the AUDIO VIDEO jack.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 02, and press the PAUSE button of the adjustment remote commander.
3) Select page: D, address: 14, set data: 02, and press the PAUSE button.
4) Select page: 3, address: 01, set data: 4D, and press the PAUSE button.
5) Select page: F, address: 4A, change the data and set the DC voltage (A) to the specified value.
6) Press the PAUSE button.
7) Select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
8) Select page: D, address: 10, set data: 00, and press the PAUSE button.
9) Select page: D, address: 14, set data: 00, and press the PAUSE button.
10) Select page: 0, address: 01, and set data: 00.

3. Y OUT Level Adjustment (VC-205 Board)

Set the Y signal output level.

Mode	Standby
Subject	Arbitrary
Measurement Point	Video signal terminal of AUDIO VIDEO jack (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	49
Specified Value	A = 286 ± 5 mV (NTSC) A = 300 ± 5 mV (PAL)

Note : Insert the plug into the AUDIO VIDEO jack.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 02, and press the PAUSE button of the adjustment remote commander.
3) Select page: 2, address: 61, set data: 30.
4) Select page: F, address: 49, change the data and set the SYNC level (A) to the specified value.
5) Press the PAUSE button.
6) Select page: 2, address: 61, and set data: 00.
7) Select page: D, address: 10, set data: 00, and press the PAUSE button.
8) Select page: 0, address: 01, and set data: 00.

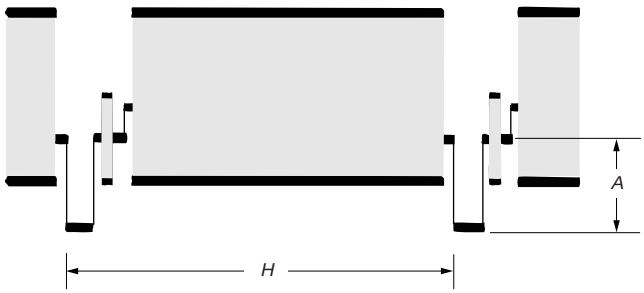


Fig. 5-2-3

4. C OUT Level Adjustment (VC-205 Board)

Set the chroma signal output level.

Mode	Standby
Subject	Arbitrary
Measurement Point	Video signal terminal of AUDIO VIDEO jack (75 Ω terminated)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	4B
Specified Value	A = 286 ± 5 mV (NTSC) A = 300 ± 5 mV (PAL)

Note : Insert the plug into the AUDIO VIDEO jack.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 02, and press the PAUSE button of the adjustment remote commander.
3) Select page: 2, address: 61, set data: 30.
4) Select page: F, address: 4B, change the data and set the burst level (A) to the specified value.
5) Press the PAUSE button.
6) Select page: 2, address: 61, and set data: 00.
7) Select page: D, address: 10, set data: 00, and press the PAUSE button.
8) Select page: 0, address: 01, and set data: 00.

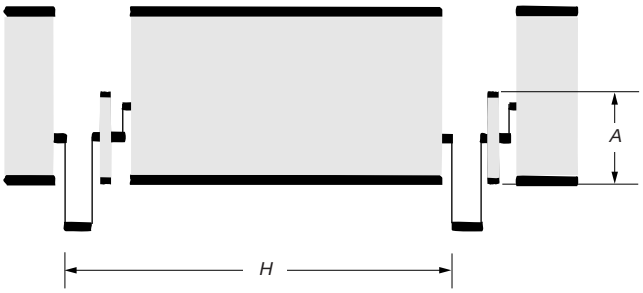


Fig. 5-2-4

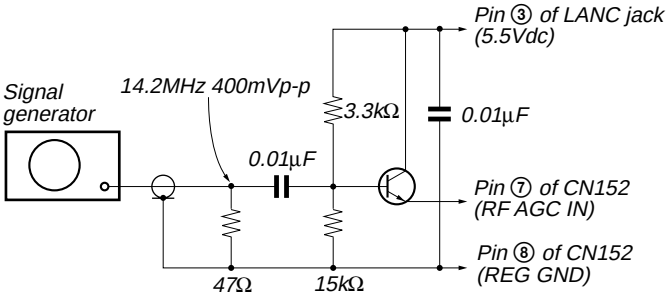
5. RP Filter f_0 Adjustment (VC-205 Board)

Adjust the LPF of the playback RF amplifier.

Mode	Standby
Subject	Arbitrary
Measurement Point	Pin ⑨ of CN152 (RF AGC OUT)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	4E
Specified Value	14.2 MHz signal level is minimum

Connection:

1) Input a 14.2 MHz, 400mVp-p CW signal to Pin ⑦ of CN152 (RF AGC IN).



Transistor : General NPN transistor (2SC403. etc)
47 Ω resistor : 1-249-401-11
3.3 kΩ resistor : 1-249-423-11
15 kΩ resistor : 1-249-431-11
0.01μF capacitor : 1-101-004-00

Fig. 5-2-5.

Adjusting method for NTSC model:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 02, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 01, set data: 35, and press the PAUSE button.
4) Select page: F, address: 4E, change the data and minimize the 14.2 MHz signal level (A).
   (The data of address: 4E should be the maximum value which satisfied the specified value.)
5) Press the PAUSE button.
6) Select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
7) Select page: D, address: 10, set data: 00, and press the PAUSE button.
8) Select page: 0, address: 01, and set data: 00.

Adjusting method for PAL model:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 02, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 01, set data: 35, and press the PAUSE button.
4) Select page: F, address: 4E, change the data and minimize the 14.2 MHz signal level (A).
   (The data of address: 4E should be the maximum value which satisfied the specified value.)
5) Press the PAUSE button.
6) Select page: F, address: 4E, and read the data (D_1).
7) Convert D_1 to decimal notation, and obtain D_1'. (Refer to Table 5-3-1. "Hexadecimal-decimal conversion table" of "5-3. Service mode".)
8) Calculate D_2' using following equations (decimal calculation).
   $D_2' = D_1' - 30$
9) Convert D_2' to a hexadecimal number and obtain D_2.
10) Select page: F, address: 4E, set data: D_2, and press the PAUSE button.
11) Select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.
12) Select page: D, address: 10, set data: 00, and press the PAUSE button.
13) Select page: 0, address: 01, and set data: 00.

Fig. 5-2-6.

6. REC Y Current Adjustment (VC-205 Board)

Adjust the Y FM signal recording current.

Mode	Standby
Subject	Arbitrary
Measurement Point	Pin ⑤ of CN152 (REC RF)
Measuring Instrument	Oscilloscope (20 MHz BW LIMIT: OFF)
Adjustment Page	F
Adjustment Address	55
Specified Value	A=170 ± 5mV (NTSC) A=170 ± 5mV (PAL)

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 02, and press the PAUSE button of the adjustment remote commander.
3) Select page: 3, address: 01, set data: 43, and press the PAUSE button.
4) Select page: F, address: 60, after note down the data , set data: 00, and press the PAUSE button.
5) Select page: F, address: 55, change the data and set the Y signal level (A) to the specified value.
6) Press the PAUSE button.
7) Select page: F, address: 60, set the data noted down at step 4), and press the PAUSE button.
8) Select page: 3, address: 01, set data: 00, and press the PAUSE button.
9) Select page: D, address: 10, set data: 00, and press the PAUSE button.
10) Select page: 0, address: 01, and set data: 00.

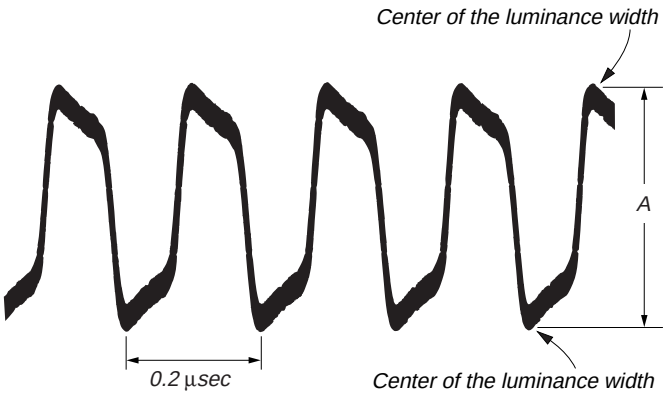


Fig. 5-2-7.

7. REC L Level Adjustment (VC-205 Board)

Set the recording levels of the REC AFM signal and REC ATF signal. If the level is too low, the audio S/N will deteriorated, tracking will not be stable, If too high, color beats will be produced on the self-recording / playback image.

Mode	Standby
Subject	Arbitrary
Measurement Point	Pin ⑤ of CN152 (REC RF)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	60, 5F
Specified Value	A=8.0 ± 0.6mV (NTSC) A=7.5 ± 0.6mV (PAL)

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 02, and press the PAUSE button of the adjustment remote commander.
3) Select page: 2, address: 61, and set data: 30.
4) Select page: 3, address: 01, set data: 43, and press the PAUSE button.
5) Select page: F, address: 55, after note down the data , set data: 00, and press the PAUSE button.
6) Select page: F, address: 65, set data: 00, and press the PAUSE button.
7) Select page: F, address: 60, change the data and set the REC AFM signal level (A) to the specified value.
8) Press the PAUSE button.
9) Select page: F, address: 5F, set the same data as page: F, address: 60 and press the PAUSE button of the adjustment remote commander.
10) Select page: F, address: 55, set the data noted down at step 5), and press the PAUSE button.
11) Select page: 3, address: 01, set data: 00, and press the PAUSE button.
12) Select page: 2, address: 61, and set data: 00.
13) Select page: D, address: 10, set data: 00, and press the PAUSE button.
14) Select page: 0, address: 01, and set data: 00.
15) Perform “REC C Current Adjustment”.

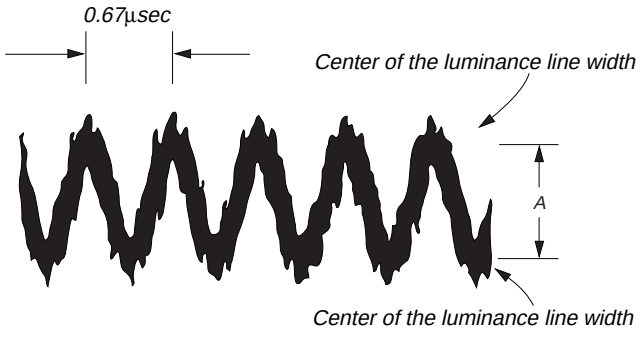


Fig. 5-2-8.

8. REC C Current Adjustment (VC-205 Board)

Set the recording current levels of the REC Chroma signal. If it is too low, chroma signal noise in played back picture will increased. If too high, Y signal noise will increase and white modulation noise will be produced.

Mode	Standby
Subject	Arbitrary
Measurement Point	Pin ⑤ of CN152 (REC RF)
Measuring Instrument	Oscilloscope
Adjustment Page	F
Adjustment Address	65
Specified Value	A=30.9 ± 1.0mV (NTSC) A=27.6 ± 1.0mV (PAL)

Connection:

1) Disconnect CN151 of VC-205 board.

Adjusting method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: D, address: 10, set data: 02, and press the PAUSE button of the adjustment remote commander.
3) Select page: 2, address: 61, and set data: 30.
4) Select page: 3, address: 01, set data: 43, and press the PAUSE button.
5) Select page: F, address: 55, after note down the data , set data: 00, and press the PAUSE button.
6) Select page: F, address: 65, change the data and set the REC chroma signal level (A) to the specified value.
7) Press the PAUSE button.
8) Select page: F, address: 55, set the data noted down at step 5), and press the PAUSE button.
9) Select page: 3, address: 01, set data: 00, and press the PAUSE button.
10) Select page: 2, address: 61, and set data: 00.
11) Select page: D, address: 10, set data: 00, and press the PAUSE button.
12) Select page: 0, address: 01, and set data: 00.

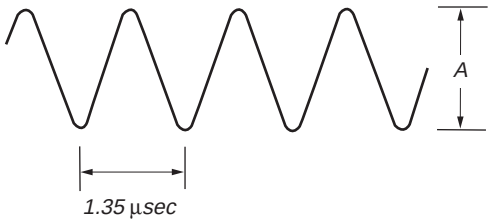


Fig. 5-2-9.

2-4. AUDIO SYSTEM ADJUSTMENT

[Connecting the measuring instruments for the audio]

Connect the audio system measuring instruments as shown in Fig. 5-2-10.

[How to record the 400Hz, –7.5dBs audio signal]

Before adjusting the audio system, prepare a video cartridge which is recorded 400Hz, –7.5dBs audio signal.

Note : To record the audio signal on a video cartridge, use another main unit which is adjusted correctly.

Recording method:

1) Install a video cartridge.
2) Connect the adjustment remote commander.
3) Select page: 3, address: 01, set data: 73 and press the PAUSE button of the adjustment remote commander.
4) Input the 400Hz, –7.5dBs signal in the audio input terminal of AUDIO VIDEO jack.
5) Press the START/STOP button and set to camera recording mode.
6) Record the signal for a few minutes.

After completing recording, select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.

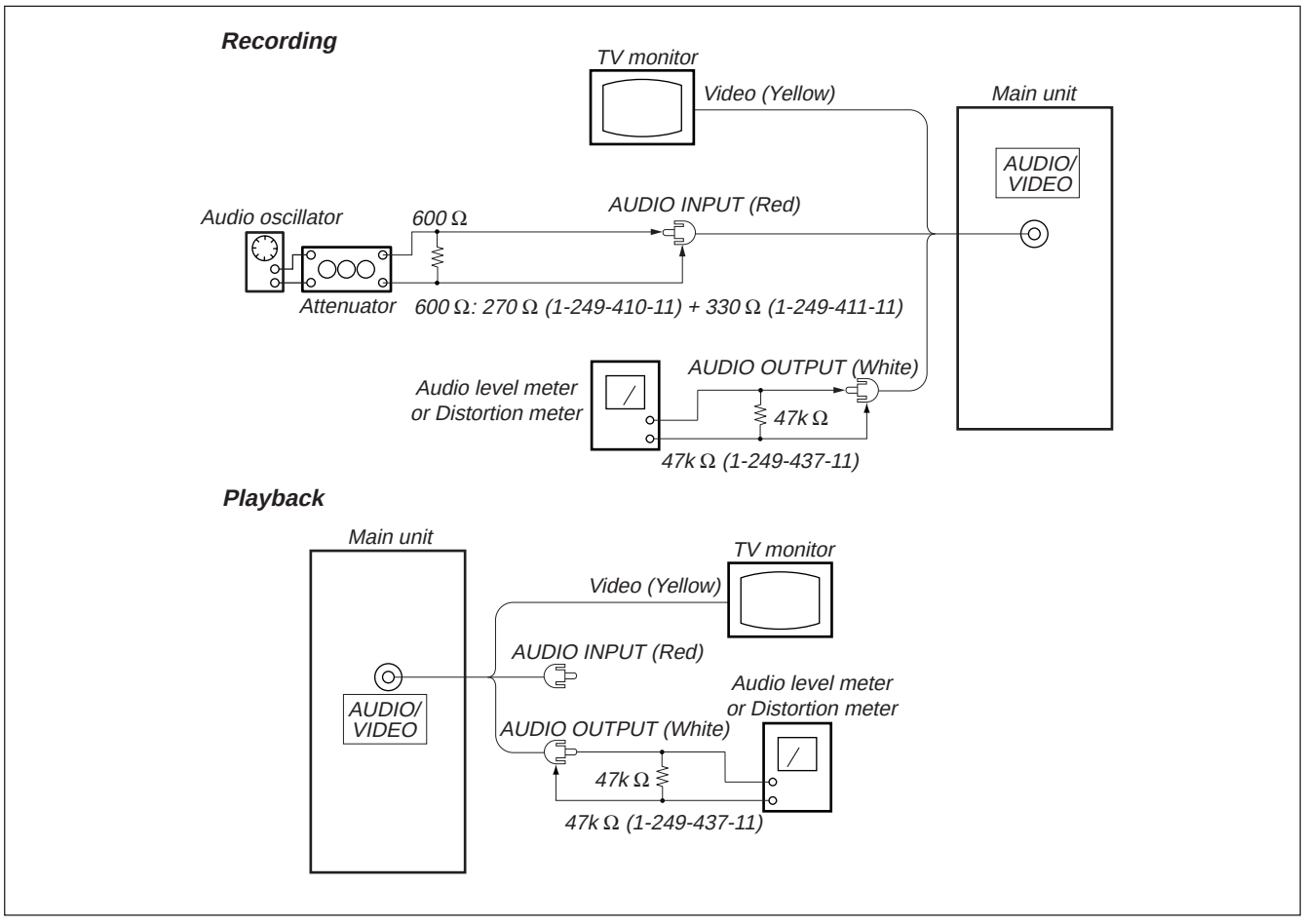


Fig. 5-2-10.

1. 1.5 MHz Deviation Adjustment (MJ-88 Board)

Adjust to the optimum audio FM signal deviation.
If the adjustment is not correct, its playback level will differ from that of other units.

Mode	Playback
Signal	400Hz, –7.5dBs (Note)
Measurement Point	Audio output terminal of AUDIO VIDEO jack
Measuring Instrument	Audio level meter
Adjustment Page	F
Adjustment Address	45
Specified Value	–7.5 ± 0.5dBs

Note : Refer to "How to record the 400Hz, –7.5dBs audio signal".

Adjusting method :

1) Select page: 0, address: 01, and set data: 01.
2) Select page: F, address: 45, change the data and set the 400Hz signal level to the specified value.
3) Press the PAUSE button of the adjustment remote commander.
4) Select page: 0, address: 01, and set data: 00.

2. BPF Adjustment (MJ-88 Board)

Adjust to the optimum audio BPF characteristics of the IC.
If the adjustment is not correct, the distortion rate and S/N ratio will worsen.

Mode	Playback
Signal	400Hz, –7.5dBs (Note)
Measurement Point	Audio output terminal of AUDIO VIDEO jack
Measuring Instrument	Distortion meter
Adjustment Page	F
Adjustment Address	47
Specified Value	The distortion rate should be minimum.

Note : Refer to "How to record the 400Hz, –7.5dBs audio signal".

Adjusting method :

1) Select page: 0, address: 01, and set data: 01.
2) Increase the data of page: F, address: 47 from "80", and read the data D_1 when the distortion rate is getting worse.
3) Decrease the data of page: F, address: 47 from "80", and read the data D_2 when the distortion rate is getting worse.
4) Obtain the average value of D_1 and D_2 , and take it as D_3.
5) Select page: F, address: 47, set data: D_3, and press the PAUSE button of the adjustment remote commander.
6) Select page: 0, address: 01, and set data: 00.

3. Overall Level Characteristics Check

Mode	Camera recording and playback
Signal	400Hz, –7.5dBs signal: Audio input terminal of AUDIO VIDEO jack
Measurement Point	Audio output terminal of AUDIO VIDEO jack
Measuring Instrument	Audio distortion meter
Specified Value	$-7.5\ ^{+2.7}_{-2.0}$ dBs

Checking Method

1) Select page: 3, address: 01, set data: 73 and press the PAUSE button of the adjustment remote commander.
2) Input the 400Hz, –7.5dBs signal in the audio input terminal of AUDIO VIDEO jack.
3) Record the signal for one minute.
4) Disconnect the audio input signal.
5) Playback the recorded section.
6) Check that the 400Hz signal level is the specified value.
7) Select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.

4. Overall Distortion Check

Mode	Camera recording and playback
Signal	400Hz, –7.5dBs signal: Audio input terminal of AUDIO VIDEO jack
Measurement Point	Audio output terminal of AUDIO VIDEO jack
Measuring Instrument	Audio distortion meter
Specified Value	Below 0.8% (200Hz to 6kHz BPF ON)

Checking Method

1) Select page: 3, address: 01, set data: 73 and press the PAUSE button of the adjustment remote commander.
2) Input the 400Hz, –7.5dBs signal in the audio input terminal of AUDIO VIDEO jack.
3) Record the signal for one minute.
4) Disconnect the audio input signal.
5) Playback the recorded section.
6) Check that the distortion is the specified value.
7) Select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.

5. Overall Noise Level Check

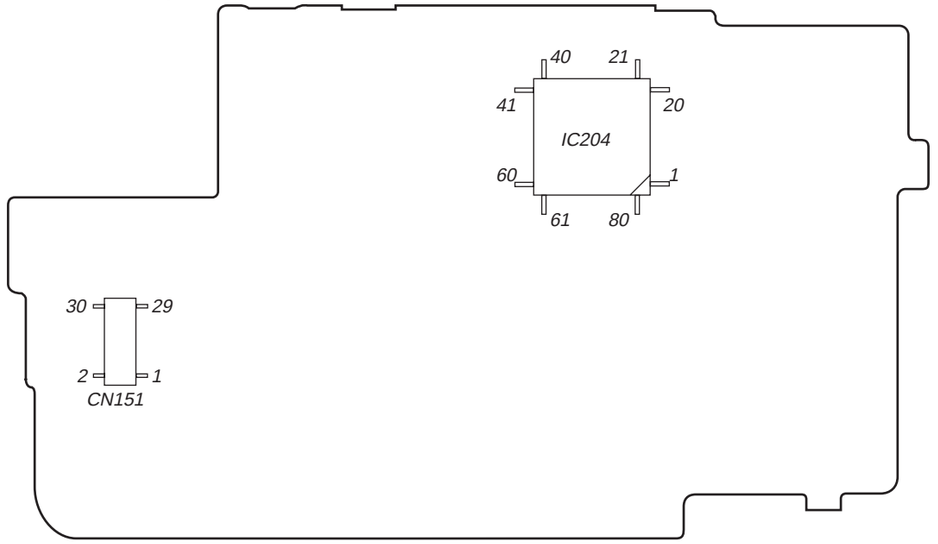
Mode	Camera recording and playback
Signal	No signal: Audio input terminal of AUDIO VIDEO jack
Measurement Point	Audio output terminal of AUDIO VIDEO jack
Measuring Instrument	Audio level meter
Specified Value	Below –57.5dBs (IHF-A filter ON)

Checking Method

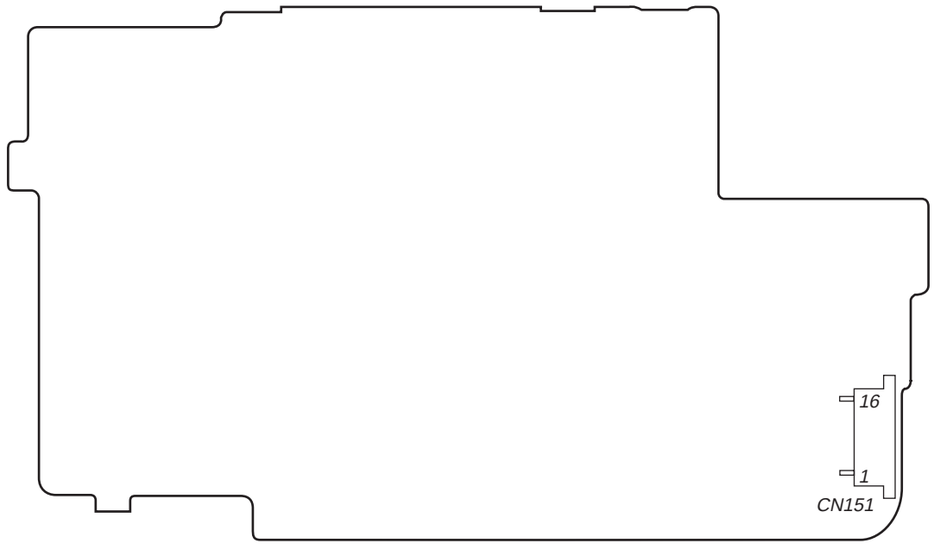
1) Select page: 3, address: 01, set data: 73, and press the PAUSE button of the adjustment remote commander.
2) Short-circuit the audio input terminal of AUDIO VIDEO jack.
3) Record the signal for one minute.
4) Playback the recorded section.
5) Check that the noise level is the specified value.
6) Select page: 3, address: 01, set data: 00, and press the PAUSE button of the adjustment remote commander.

ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

VC-205 BOARD (SIDE A)



VC-205 BOARD (SIDE B)



5-3. SERVICE MODE

3-1. ADJUSTMENT REMOTE COMMANDER

The adjustment remote commander is used for changing the calculation coefficient in signal processing, EVR data, etc. The adjustment remote commander performs bi-directional communication with the unit using the remote commander signal line (LANC). The resultant data of this bi-directional communication is written in the non-volatile memory.

1. Using the Adjustment Remote Commander

1) Connect the adjustment remote commander to the VC-205 board CN152 via CPC 11 jig (J-6082-425-A). To operate the adjustment remote commander, connect the DC input lands of CPC 11 jig to the DC power supply (6.0 to 7.2Vdc).
2) Set the HOLD switch of the adjustment remote commander to "HOLD" (SERVICE position). If it has been properly connected, the LCD on the adjustment remote commander will display as shown in Fig. 5-3-1.

Fig. 5-3-1

3) Operate the adjustment remote commander as follows.
   - Changing the page
     The page increases when the EDIT SEARCH+ button is pressed, and decreases when the EDIT SEARCH– button is pressed. There are altogether 16 pages, from 0 to F.

Hexadecimal notation	0 1 2 3 4 5 6 7 8 9 A B C D E F
LCD Display	0 1 2 3 4 5 6 7 8 9 A b c d E F
Decimal notation conversion value	0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

   - Changing the address
     The address increases when the FF (►►) button is pressed, and decreases when the REW (◄◄) button is pressed. There are altogether 256 addresses, from 00 to FF.
   - Changing the data (Data setting)
     The data increases when the PLAY (►) button is pressed, and decreases when the STOP (■) button is pressed. There are altogether 256 data, from 00 to FF.
   - Writing the adjustment data
     The PAUSE button must be pressed to write the adjustment data (D, E, F page) in the nonvolatile memory. (The new adjusting data will not be recorded in the nonvolatile memory if this step is not performed.)
4) After completing all adjustments, turn off the main power supply once.

2. Precautions Upon Using the Adjustment Remote Commander

Mishandling of the adjustment remote commander may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

3-2. DATA PROCESS

The calculation of the DDS display and the adjustment remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data. Indicates the hexadecimal-decimal conversion table.

Hexadecimal-decimal Conversion Table ②

Lower digit of hexadecimal / Upper digit of hexadecimal	0	1	2	3	4	5	6	7	8	9	A (A)	B (b)	C (C)	D (d)	E (E)	F (F)
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	77	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A (A)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
① B (b)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C (C)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D (d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E (E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F (F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

Note: The characters shown in the parenthesis ( ) shown the display on the adjustment remote commander.

(Example) If the DDS display or the adjustment remote commander shows BD (bd);
Because the upper digit of the adjustment number is B (b), and the lower digit is D (d), the meeting point "189" of ① and ② in the above table is the corresponding decimal number.

Table. 5-3-1.

3-3. SERVICE MODE

1. Setting the Test Mode

Page D	Address 10

Data	Function
00	Normal
03	Forced power ON (Forced camera + VTR power ON)
01	Forced camera power ON
02	Forced VTR power ON

- Before setting the data , select page: 0, address: 01, and set data: 01.
- For page D, the data set is recorded in the non-volatile memory by pressing the PAUSE button of the adjustment remote commander. In this case, take note that the test mode will not be exited even when the main power is turned off.
- After completing adjustments/repairs, be sure to return the data of this address to 00, and press the PAUSE button of the adjustment remote commander.
  Select page: 0, address: 01, and set data: 00.

2. Video Cartridge Emergence Memory Address

Note : The emergency data are recorded in the EEPROM of the video cartridge.

Page B	Address 10 to 1B

Address	Contents
10	EMG code when first error occurs
12	Upper : Position SW code when shift starts when first error occurs Lower : Position SW code when first error occurs
13	Lower : Position SW code to be moved when first error occurs
14	EMG code when second error occurs
16	Upper : Position SW code when shift starts when second error occurs Lower : Position SW code when second error occurs
17	Lower : Position SW code to be moved when second error occurs
18	EMG code when last error occurs
1A	Upper : Position SW code when shift starts when last error occurs Lower : Position SW code when last error occurs
1B	Lower : Position SW code to be moved when last error occurs

When no error occurs in this unit, data “00” is written in the above addresses (10 to 1B). when first error occurs in the unit, the data corresponding to the error is written in the first emergency address (10 to 13). In the same way, when the second error occurs, the data corresponding to the error is written in the second emergency address (14 to 17).
Finally, when the last error occurs, the data corresponding to the error is written in the last emergency address (18 to 1B).

Note 1: After completing adjustments, be sure to initialize the data of addresses 10 to 1B to “00”.

Initializing method:

1) Select page: 0, address: 01, and set data: 01.
2) Select page: 2, address: 01, set data: 67, and press the PAUSE button.
3) Select page: 0, address: 01, and set data: 00.

2-1. EMG Code (Emergency Code)

Codes corresponding to the errors which occur are written in addresses 10, 14 and 18. The type of error indicated by the code are shown in the following table.

Code	Emergency Type
00	No error
10	Position SW emergency during position shift / Plunger emergency / Reel motor emergency
11	Position SW emergency when position is stable / Plunger emergency
22	T reel FG emergency
30	FG emergency at the start up of the reel motor
31	FG emergency during the normal rotation of the reel motor
40	FG emergency at the start up of the drum
41	PG emergency at the start up of the drum
42	FG emergency during the normal rotation of the drum
43	PG emergency during the normal rotation of the drum
44	Phase emergency during the normal rotation of the drum
50	Sudden stop (Marker detecting emergency)
70	Communication emergency of the video cartridge EEPROM
80	Format of the video cartridge is different
90	Count data emergency during initializing

2-2. Position SW Code

Code	Position
0	PB position
1	STOP position
A	No position shift

3. Record of Use of the Video Cartridge

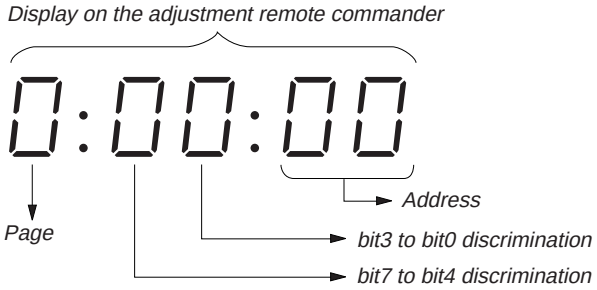
Note : These data are recorded in the EEPROM of the video cartridge.

Page B	Address 1C to 21

Address	Function		Remarks
1C	Drum rotation counted time (BCD code)	Hour (H)	1000th place digit and 100th place digit of counted time (decimal digit)
1D		Hour (L)	10th place digit and 1st place digit of counted time (decimal digit)
1E		Minute	
1F	Tape running counted time (BCD code)	Hour (H)	1000th place digit and 100th place digit of counted time (decimal digit)
20		Hour (L)	10th place digit and 1st place digit of counted time (decimal digit)
21		Minute	

4. Bit value discrimination

Bit values must be discriminated using the display data of the adjustment remote commander for following items. Use the table below to discriminate if the bit value is “1” or “0”.



	Display on the adjustment remote commander	Bit values			
		bit3 or bit7	bit2 or bit6	bit1 or bit5	bit0 or bit4
	0	0	0	0	0
	1	0	0	0	1
	2	0	0	1	0
	3	0	0	1	1
	4	0	1	0	0
	5	0	1	0	1
	6	0	1	1	0
	7	0	1	1	1
Ⓐ	8	1	0	0	0
	9	1	0	0	1
	A (R)	1	0	1	0
	B (b)	1	0	1	1
	C (c)	1	1	0	0
	D (d)	1	1	0	1
Ⓑ	E (E)	1	1	1	0
	F (F)	1	1	1	1

Example: If “8E” is displayed on the adjustment remote commander, the bit values for bit7 to bit4 are shown in the Ⓐ column, and the bit values for bit3 to bit0 are shown in the Ⓑ column.

5. Switch Check (1)

Page 3	Address 43

Bit	Function	When bit value=1	When bit value=0
0			
1	POWER SW	OFF	ON
2	START/STOP SW	OFF	ON
3	BAT HOLDER SW	OFF	ON
4	PHOTO FREEZE SW	OFF	ON
5			
6			
7			

Using method:

1) Select page: 3, address: 43.
2) By discriminating the bit value of display data, the state of the switches can be discriminated.

6. Switch Check (2)

Page 3	Address 49

Bit	Function	When bit value=1	When bit value=0
0			
1			
2			
3			
4			
5			
6	AUDIO VIDEO jack	Used	Not used
7			

Using method:

1) Select page: 3, address: 49.
2) By discriminating the bit value of display data, the state of the switches can be discriminated.

7. Switch Check (3)

Page 3	Address 60 to 63

Using method:

1) Select page:3, address: 60 to 63.
2) By discriminating the display data, the pressed key can be discriminated.

Address	Data						
	00 to 12	13 to 36	37 to 5D	5E to 7D	7E to A5	A6 to D6	D7 to FF
60 (KEY AD 0) (IC604 ⑨③)	REW (FK block S004)	STOP (FK block S005)	END SEARCH (FK block S006)	PHOTO SCAN (FK block S007)	START/STOP MODE 5SEC REC (FK block S008)	START/STOP MODE PUSH REC (FK block S008)	START/STOP MODE NORMAL REC (FK block S008)
61 (KEY AD 1) (IC604 ⑨④)	PLAY (FK block S009)	FF (FK block S010)	PAUSE (FK block S011)	BACK LIGHT (FK block S012)	PHOTO START (FK block S015)	MACRO ON (FK block S013)	MACRO OFF (FK block S013)
62 (KEY AD 2) (IC604 ⑨⑤)	TIME (PD-99 board S703)					SPEAKER OFF (PD-99 board S701)	SPEAKER ON (PD-99 board S701)
63 (KEY AD 3) (IC604 ⑨⑥)	DATE (PD-99 board S704)					PANEL REVERSE (PD-99 board S702)	PANEL NORMAL (PD-99 board S702)

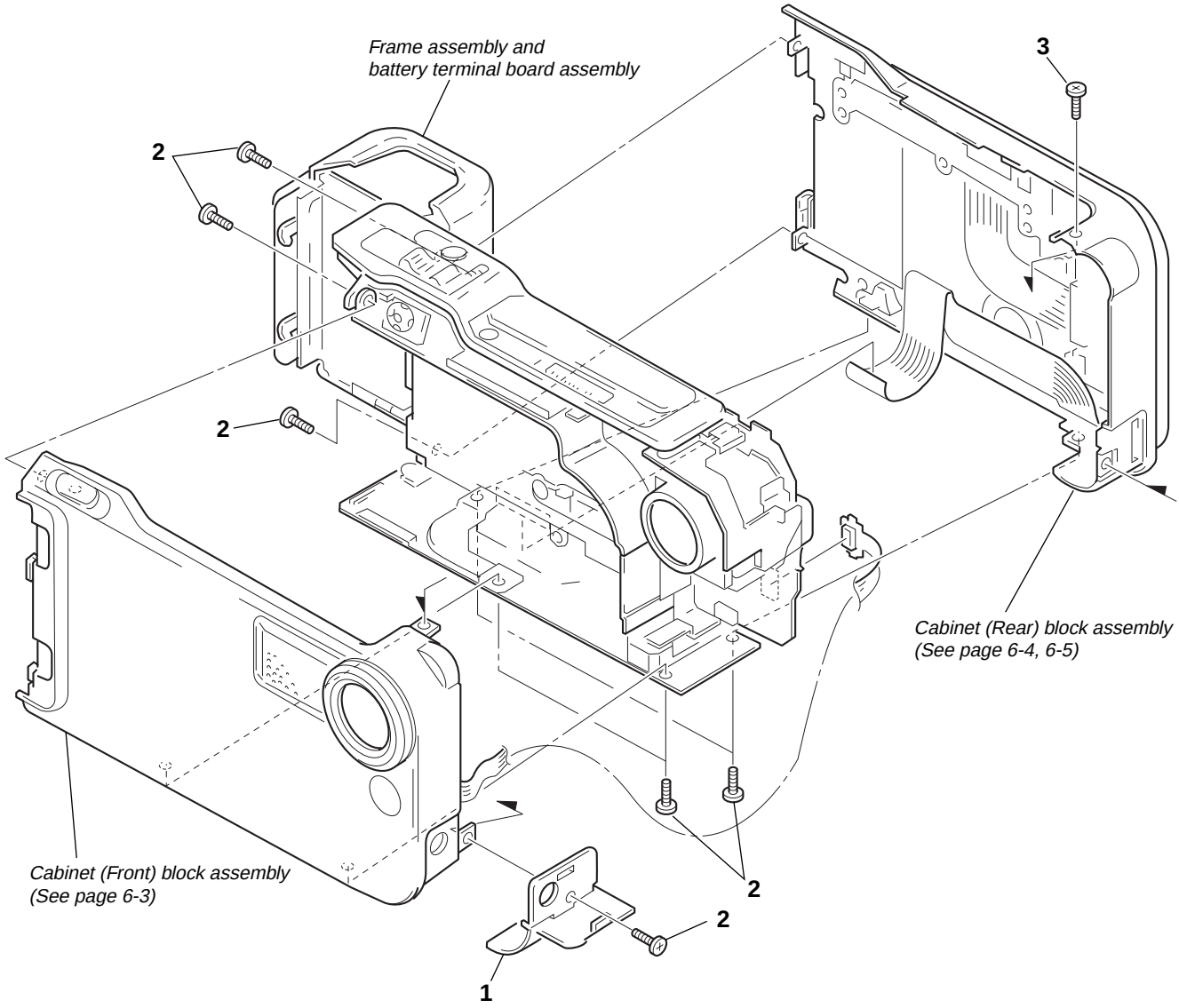
SECTION 6
REPAIR PARTS LIST

6-1. EXPLODED VIEWS

NOTE:

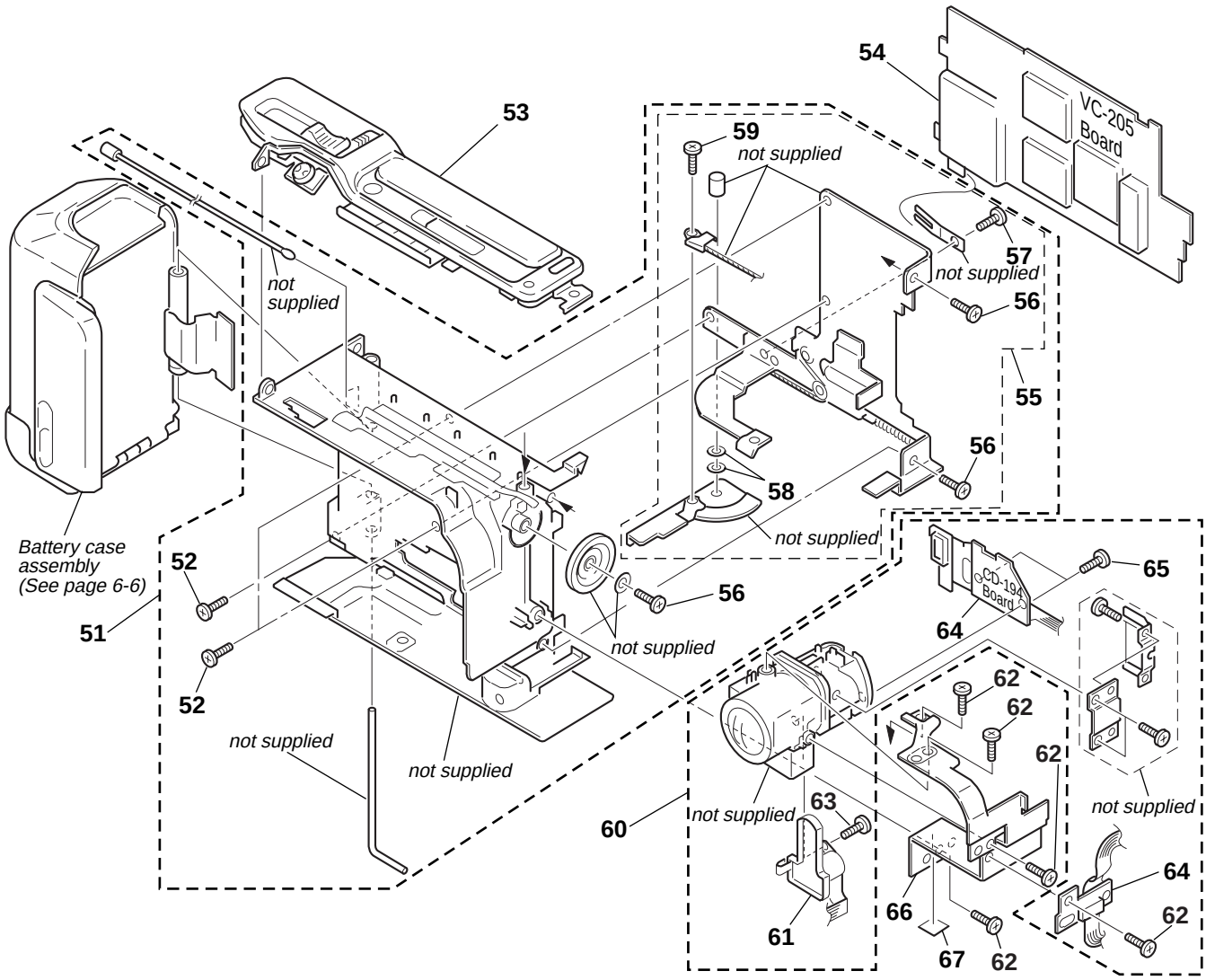
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

6-1-1. CABINET SECTION



Ref. No.	Part No.	Description	Remarks
1	X-3948-828-1	LID ASSY, JACK	
2	3-052-245-01	BOLT (M1.4X3), SPRING	
3	3-389-523-22	SCREW, LOCK ACE (M1.4X2.5)	

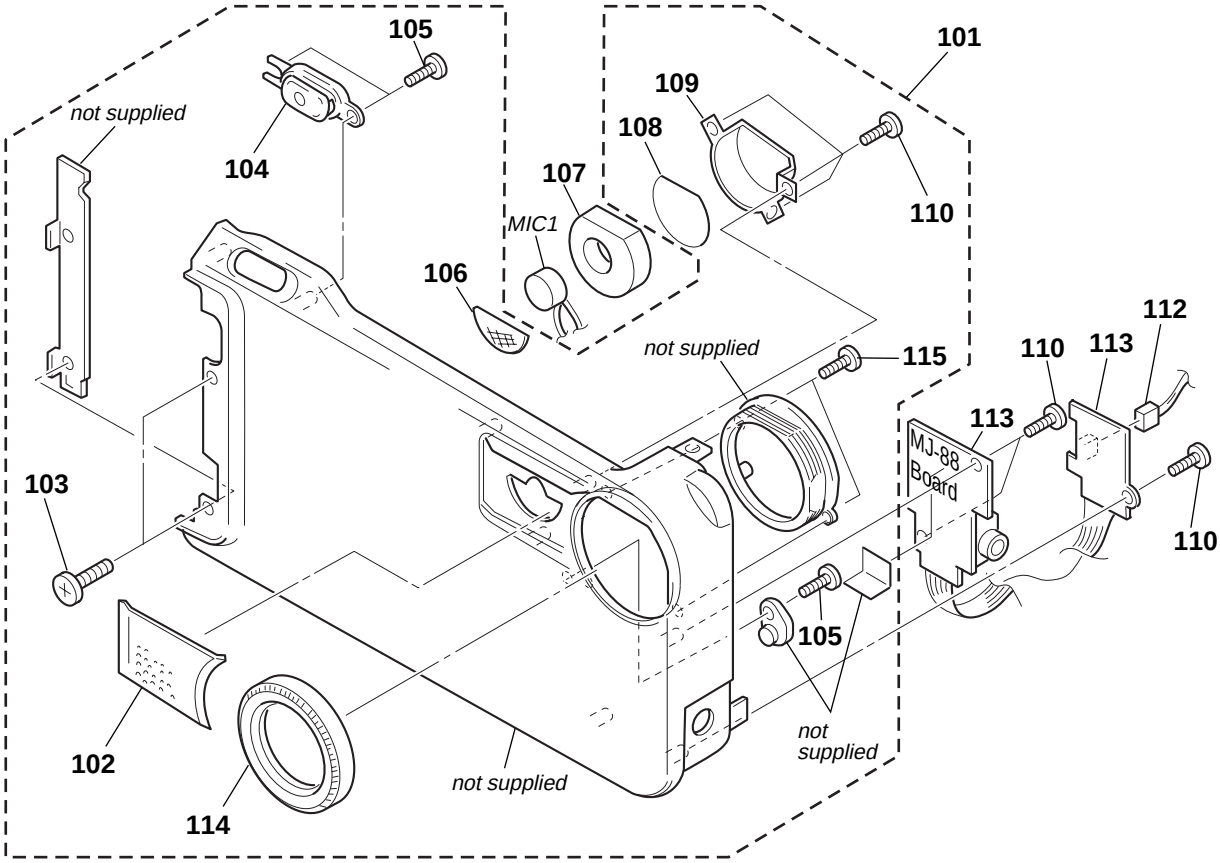
6-1-2. FRAME ASSEMBLY, LENS UNIT



Ref. No.	Part No.	Description	Remarks
51	X-3948-804-1	FRAME ASSY	
52	3-052-246-01	BOLT (M1.7), SPRING	
53	A-7093-890-A	CABINET (UPPER) BLOCK ASSY	
54	A-7085-081-A	VC-205P BOARD BOARD, COMPLETE (CR1E)	
54	A-7085-080-A	VC-205 BOARD BOARD, COMPLETE (CR1)	
55	X-3948-805-1	EJECTOR ASSY	
56	3-318-382-21	SCREW (1.7X3), TAPPING	
57	3-703-816-02	SCREW (M1.4X2.0), SPECIAL HEAD	
58	3-701-439-21	WASHER	
59	7-627-552-27	PRECISION +P 1.7X2	

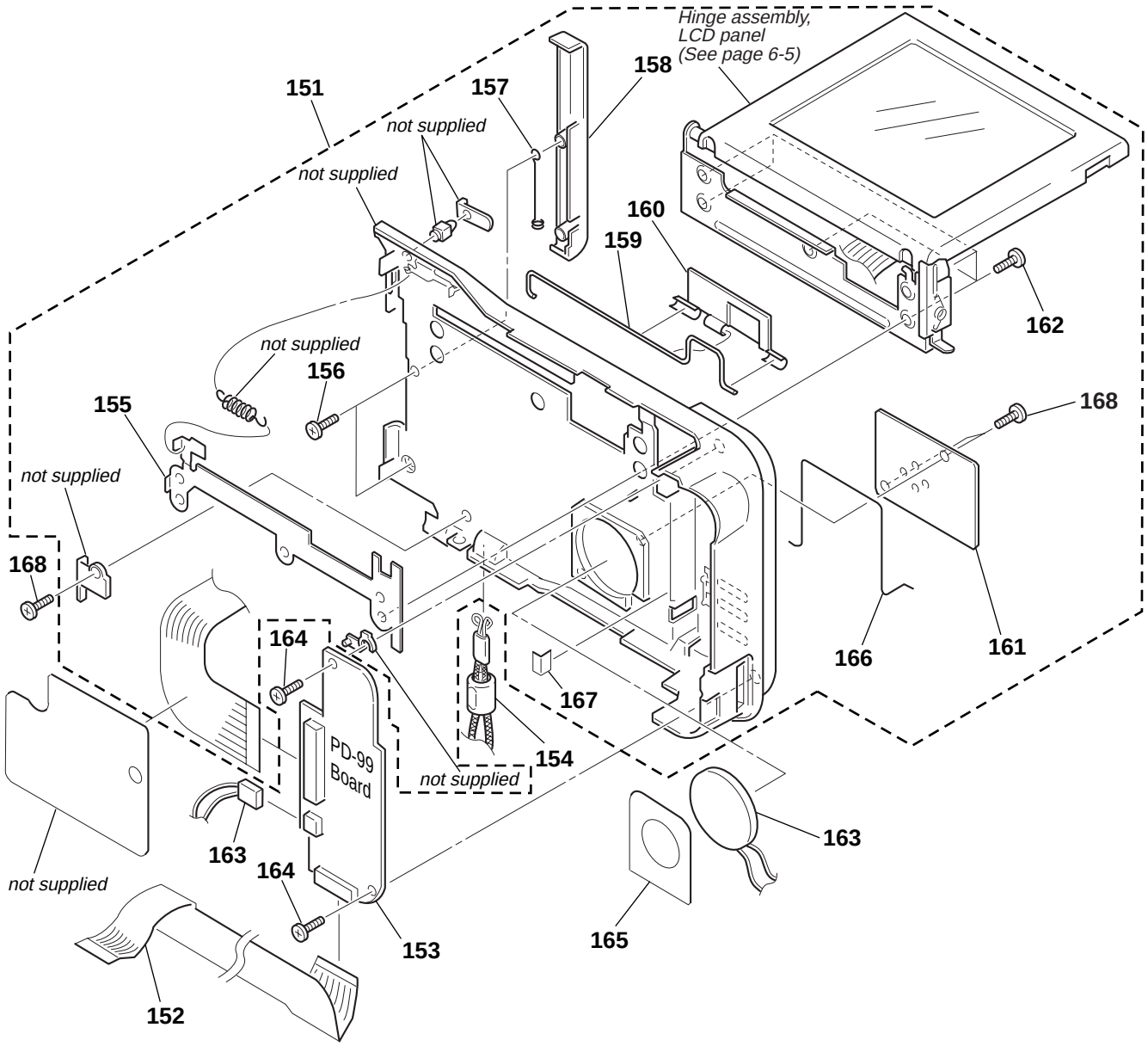
Ref. No.	Part No.	Description	Remarks
60	A-7030-909-A	LENS ASSY (CR1E)	
60	A-7030-904-A	LENS ASSY (CR1)	
61	3-709-425-01	IRIS ASSY	
62	3-713-791-01	SCREW (1.7X4), TAPPING, P2	
63	3-708-804-01	SCREW (P1.7X3.5)	
64	A-7073-627-A	CD-191 BOARD, COMPLETE	
65	3-318-203-11	SCREW (B1.7X6), TAPPING	
* 66	3-050-625-01	FRAME, LENS	
* 67	3-051-592-01	INSULATING SHEET, LENS	

6-1-3. CABINET (FRONT) BLOCK ASSEMBLY



Ref. No.	Part No.	Description	Remarks
101	X-3948-799-1	CABINET (FRONT) ASSY	
102	3-050-600-01	GRILLE, MICROPHONE	
103	7-627-552-27	SCREW,PRECISION +P 1.7X2	
104	X-3948-810-1	BUTTON ASSY, SS	
105	3-703-816-42	SCREW (M1.4X2.5), SPECIAL HEAD	
* 106	3-050-705-01	SCREEN, WINDOW	
* 107	3-050-693-01	HOLDER, MICROPHONE	
* 108	3-050-730-01	SHEET, MICROPHONE RETAINER	
* 109	3-050-604-01	RETAINER, MICROPHONE	
110	3-389-523-15	SCREW (LOCK ACE)	
112	1-958-850-11	HARNESS (MC-72)	
113	A-7073-625-A	MJ-88 BOARD, COMPLETE	
114	3-050-601-01	RING, ORNAMENTAL	
115	3-703-816-01	SCREW (M1.4X2.0) SPECIAL HEAD	
MIC1	1-542-355-11	MICROPHONE, CAP	

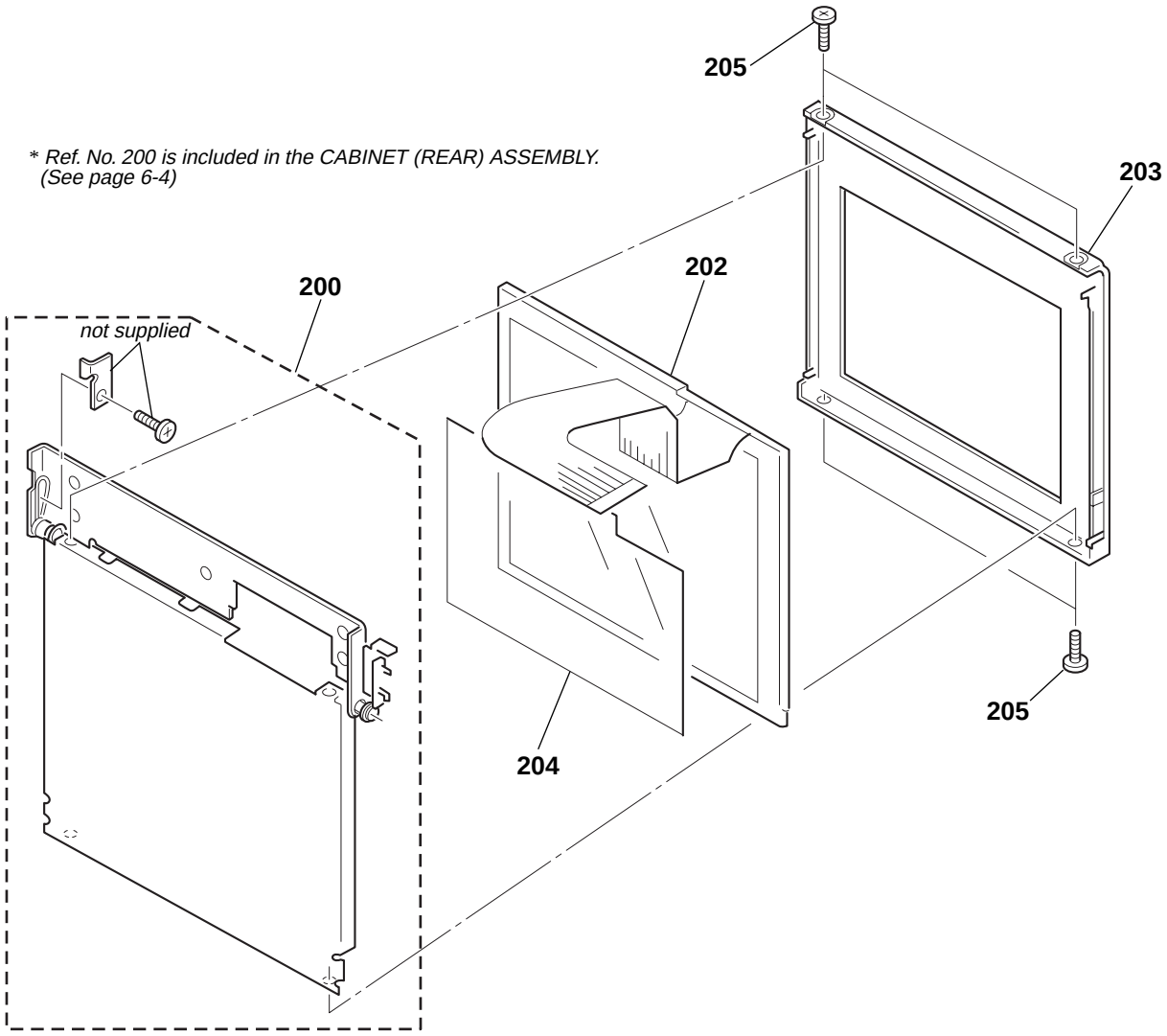
6-1-4. CABINET (REAR) BLOCK ASSEMBLY-1 (CABINET (REAR) ASSEMBLY, PD-99 BOARD)



Ref. No.	Part No.	Description	Remarks
151	X-3948-800-1	CABINET (REAR) ASSY	
152	1-670-506-11	FP-686 FLEXIBLE BOARD	
153	A-7073-626-A	PD-99 BOARD, COMPLETE	
154	3-050-664-01	STRAP, HAND	
* 155	3-050-649-01	PLATE, HINGE REAR	
156	3-318-382-21	SCREW (1.7X3), TAPPING	
157	3-050-652-01	SPRING, LOCK	
158	3-050-648-01	COVER, HINGE	
159	3-050-651-01	BAR, TORSION	

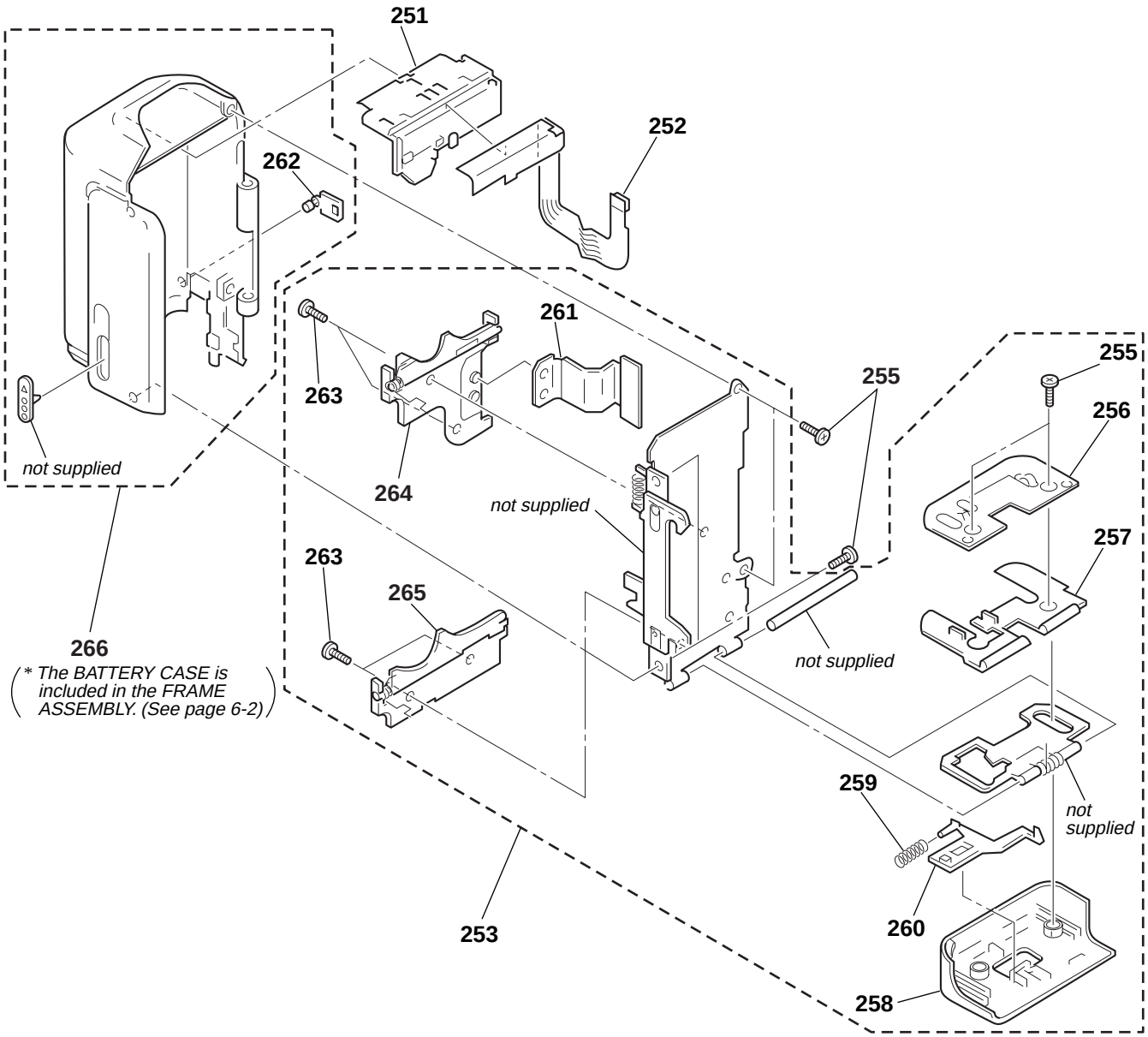
Ref. No.	Part No.	Description	Remarks
160	3-050-650-01	PLATE, FLEXIBLE BLIND	
161	3-050-716-01	PLATE, SP FRONT	
162	3-051-558-27	SCREW, LOCK ACE (M1.7X1.4)	
163	1-505-979-11	SPEAKER (1.7CM)	
164	3-389-523-22	SCREW, LOCK ACE (M1.4X2.5)	
* 165	3-050-727-01	PLATE, SP REAR	
166	3-051-114-01	SPRING (L) LOCK	
* 167	3-051-682-01	SHEET, LOCK BLIND	
168	3-051-558-07	SCREW, LOCK ACE (M1.7X2)	

6-1-5. CABINET (REAR) BLOCK ASSEMBLY-2 (HINGE ASSEMBLY, LCD PANEL)



Ref. No.	Part No.	Description	Remarks
200	X-3948-801-1	HINGE ASSY	
202	1-803-185-11	INDICATOR MODULE, LIQUID CRYST	
203	3-050-628-01	CABINET (FRONT), LCD	
204	3-050-818-01	SPACER, PANEL	
205	3-389-523-15	SCREW, LOCK ACE (M1.4X2)	

6-1-6. BATTERY CASE ASSEMBLY



Ref. No.	Part No.	Description	Remarks
251	1-694-444-11	TERMINAL BOARD, BATTERY	
252	1-670-505-21	FP-685 FLEXIBLE BOARD	
253	X-3948-806-1	LID ASSY, BT	
255	3-318-382-21	SCREW (1.7X3), TAPPING	
256	X-3948-808-1	CONTACT ASSY, BT	
257	3-050-580-01	HOLDER, CONTACT	
258	3-050-578-01	LID, BT	
259	3-050-594-01	SPRING, COMPRESSION	

Ref. No.	Part No.	Description	Remarks
260	3-050-579-01	BUTTON, BT RELEASE	
261	3-050-582-01	COVER, BT FLEXIBLE	
262	3-050-583-01	CAP, DC CODE	
263	3-051-558-01	ACE (M1.7), LOCK	
264	X-3948-829-1	RETAINER (A) ASSY, SEPARATOR	
265	X-3948-830-1	RETAINER (B) ASSY, SEPARATOR	
266	X-3948-811-1	CASE ASSY, BT	

6-2. ELECTRICAL PARTS LIST

NOTE:

When indicating parts by reference number, please include the board name.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- CAPACITORS:
  uF: µF
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: µH
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , uPC... , µPC... ,
  uPD..., µPD...

Ref. No.	Part No.	Description			Remarks
	A-7073-627-A	CD-191 BOARD, COMPLETE			
		**********			
					(Ref.No.: 1,000 Series)
		< CAPACITOR >			
C951	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C953	1-135-214-21	TANTAL. CHIP	4.7uF	20%	20V
C955	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
C956	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C957	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C958	1-135-210-11	TANTALUM CHIP	4.7uF	20%	10V
		< CONNECTOR >			
CN951	1-766-618-21	CONNECTOR, FFC/FPC 7P			
CN952	1-778-596-21	CONNECTOR, BOARD TO BOARD 30P			
		< DIODE >			
D951	8-719-070-91	DIODE TLSU1008(T05,SOY)			
		< IC >			
IC952	8-759-533-83	IC AD8011AR-REEL			
		< COIL >			
L951	1-414-757-11	INDUCTOR 100uH			
L952	1-414-757-11	INDUCTOR 100uH			
		< RESISTOR >			
R951	1-216-808-11	METAL CHIP	82	5%	1/16W
R952	1-216-821-11	METAL CHIP	1K	5%	1/16W
R955	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R956	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R958	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R959	1-216-809-11	METAL CHIP	100	5%	1/16W
	A-7073-625-A	MJ-88 BOARD, COMPLETE			
		**********			
					(Ref.No.: 1,000 Series)
		< BATTERY >			
BT301	1-528-897-11	BATTERY, LITHIUM (SECONDARY)			

Ref. No.	Part No.	Description			Remarks
		< CAPACITOR >			
C301	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C303	1-135-318-11	TANTAL. CHIP	33uF	20%	4V
C304	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C305	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C307	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C308	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C309	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C310	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C312	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C313	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C314	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C315	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C316	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C317	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C318	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C319	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C320	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C321	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C322	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C323	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C324	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C325	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C326	1-162-925-11	CERAMIC CHIP	68PF	5%	50V
C328	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C329	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C392	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C393	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C751	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C752	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V
C753	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C754	1-110-563-11	CERAMIC CHIP	0.068uF	10%	16V
C755	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C756	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C757	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C758	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C759	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C760	1-164-346-11	CERAMIC CHIP	1uF		16V
C762	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C763	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
		< CONNECTOR >			
CN301	1-778-596-21	CONNECTOR, BOARD TO BOARD 30P			
CN753	1-784-650-21	CONNECTOR 2P			

Ref. No.	Part No.	Description			Remarks
		< DIODE >			
D385	8-719-070-91	DIODE TLSU1008(T05,SOY)			
D386	8-719-404-49	DIODE MA111-TX			
D391	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D392	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D393	8-719-062-16	DIODE 01ZA8.2(TPL3)			
		< IC >			
IC301	8-759-539-48	IC AN2984FHQ-EB			
IC386	8-749-012-83	IC RS-180-T			
IC751	8-759-339-63	IC NJM2118V-TE2			
		< JACK >			
J391	1-778-040-11	JACK, SMALL TYPE (AUDIO/VIDEO OUT)			
		< COIL >			
L391	1-412-963-11	INDUCTOR 100uH			
		< TRANSISTOR >			
Q301	8-729-042-74	TRANSISTOR UN9216J-(K8).SO			
Q391	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO			
Q392	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO			
Q751	8-729-420-24	TRANSISTOR 2SB1218A-QRS-TX			
		< RESISTOR >			
R306	1-216-817-11	METAL CHIP	470	5%	1/16W
R307	1-216-817-11	METAL CHIP	470	5%	1/16W
R308	1-216-864-11	METAL CHIP	0	5%	1/16W
R311	1-216-845-11	METAL CHIP	100K	5%	1/16W
R312	1-216-845-11	METAL CHIP	100K	5%	1/16W
R313	1-216-847-11	METAL CHIP	150K	5%	1/16W
R315	1-216-820-11	METAL CHIP	820	5%	1/16W
R316	1-216-837-11	METAL CHIP	22K	5%	1/16W
R317	1-216-849-11	METAL CHIP	220K	5%	1/16W
R318	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R319	1-216-841-11	METAL CHIP	47K	5%	1/16W
R385	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R386	1-216-864-11	METAL CHIP	0	5%	1/16W
R391	1-216-864-11	METAL CHIP	0	5%	1/16W
R392	1-216-864-11	METAL CHIP	0	5%	1/16W
R397	1-216-833-11	METAL CHIP	10K	5%	1/16W
R398	1-216-833-11	METAL CHIP	10K	5%	1/16W
R751	1-216-821-11	METAL CHIP	1K	5%	1/16W
R752	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R754	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R755	1-216-838-11	METAL CHIP	27K	5%	1/16W
R756	1-216-838-11	METAL CHIP	27K	5%	1/16W
R757	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R758	1-216-864-11	METAL CHIP	0	5%	1/16W

Ref. No.	Part No.	Description			Remarks
	A-7073-626-A	PD-99 BOARD, COMPLETE			
		**********			
		(Ref.No.: 20,000 Series)			
		< CAPACITOR >			
C701	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C702	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C703	1-113-619-11	CERAMIC CHIP	0.47uF		10V
C706	1-117-920-11	TANTAL. CHIP	10uF	20%	6.3V
C707	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C708	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C709	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5501	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5502	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5503	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5504	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5505	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C5506	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5507	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C5508	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5509	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V
C5511	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5512	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C5513	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5514	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5515	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5516	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5518	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5519	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5601	1-104-851-11	TANTAL. CHIP	10uF	20%	10V
C5602	1-107-687-11	TANTAL. CHIP	3.3uF	20%	20V
C5603	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5604	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5605	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5607	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5608	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C5610	1-164-872-11	CERAMIC CHIP	82PF	5%	16V
C5611	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C5612	1-164-872-11	CERAMIC CHIP	82PF	5%	16V
C5613	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
C5616	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C5617	1-135-177-21	TANTALUM CHIP	1uF	20%	20V
C5618	1-104-916-11	TANTAL. CHIP	6.8uF	20%	20V
C5619	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5620	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C5621	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C5622	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
		< CONNECTOR >			
CN701	1-784-422-11	CONNECTOR, FFC/FPC (ZIF) 33P			
CN702	1-778-506-21	PIN, CONNECTOR (PC BOARD) 2P			
CN5601	1-691-362-11	CONNECTOR, FFC/FPC (ZIF) 24P			
		< DIODE >			
D701	8-719-062-16	DIODE 01ZA8.2(TPL3)			
D5602	8-713-102-80	DIODE 1T369-01-T8A			
D5604	8-719-976-96	DIODE MA8047-H-TX			

Ref. No.	Part No.	Description			Remarks
		< IC >			
IC701	8-759-359-49	IC NJM3414AV(TE2)			
IC5501	8-759-530-19	IC MB40D001PFV-G-BND-ER			
IC5502	8-759-539-27	IC IR3Y37A4			
IC5601	8-759-495-00	IC LZ9GH184			
IC5602	8-759-327-01	IC NJM062V(TE2)			
		< COIL >			
L701	1-412-006-31	INDUCTOR CHIP 10uH			
L5501	1-414-754-11	INDUCTOR 10uH			
L5502	1-412-006-31	INDUCTOR CHIP 10uH			
L5601	1-412-006-31	INDUCTOR CHIP 10uH			
L5603	1-412-006-31	INDUCTOR CHIP 10uH			
L5604	1-412-006-31	INDUCTOR CHIP 10uH			
L5605	1-469-236-91	INDUCTOR CHIP 27uH			
		< TRANSISTOR >			
Q701	8-729-042-74	TRANSISTOR UN9216J-(K8).SO			
Q702	8-729-032-62	TRANSISTOR 2SJ347-TE85L			
Q703	8-729-037-74	TRANSISTOR UN9213J-(K8).SO			
Q5605	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO			
Q5606	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO			
Q5607	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO			
Q5608	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO			
Q5609	8-729-037-58	TRANSISTOR UN9110J-(TX).SO			
		< RESISTOR >			
R701	1-218-953-11	RES,CHIP	1K	5%	1/16W
R702	1-218-963-11	RES,CHIP	6.8K	5%	1/16W
R703	1-218-989-11	RES,CHIP	1M	5%	1/16W
R706	1-218-977-11	RES,CHIP	100K	5%	1/16W
R707	1-218-965-11	RES,CHIP	10K	5%	1/16W
R709	1-218-973-11	RES,CHIP	47K	5%	1/16W
R710	1-218-973-11	RES,CHIP	47K	5%	1/16W
R711	1-218-937-11	RES,CHIP	47	5%	1/16W
R712	1-218-937-11	RES,CHIP	47	5%	1/16W
R713	1-218-973-11	RES,CHIP	47K	5%	1/16W
R714	1-218-973-11	RES,CHIP	47K	5%	1/16W
R715	1-218-971-11	RES,CHIP	33K	5%	1/16W
R716	1-218-969-11	RES,CHIP	22K	5%	1/16W
R717	1-218-969-11	RES,CHIP	22K	5%	1/16W
R718	1-218-973-11	RES,CHIP	47K	5%	1/16W
R5501	1-218-965-11	RES,CHIP	10K	5%	1/16W
R5512	1-218-969-11	RES,CHIP	22K	5%	1/16W
R5513	1-218-966-11	RES,CHIP	12K	5%	1/16W
R5516	1-218-973-11	RES,CHIP	47K	5%	1/16W
R5517	1-218-966-11	RES,CHIP	12K	5%	1/16W
R5518	1-218-971-11	RES,CHIP	33K	5%	1/16W
R5520	1-218-984-11	RES,CHIP	390K	5%	1/16W
R5521	1-218-966-11	RES,CHIP	12K	5%	1/16W
R5522	1-218-972-11	RES,CHIP	39K	5%	1/16W
R5528	1-218-977-11	RES,CHIP	100K	5%	1/16W
R5529	1-218-965-11	RES,CHIP	10K	5%	1/16W
R5530	1-218-965-11	RES,CHIP	10K	5%	1/16W
R5531	1-218-965-11	RES,CHIP	10K	5%	1/16W
R5534	1-218-937-11	RES,CHIP	47	5%	1/16W
R5535	1-218-937-11	RES,CHIP	47	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R5536	1-218-937-11	RES,CHIP	47	5%	1/16W
R5610	1-218-977-11	RES,CHIP	100K	5%	1/16W
R5613	1-218-990-11	SHORT	0		
R5614	1-218-978-11	RES,CHIP	120K	5%	1/16W
R5615	1-218-965-11	RES,CHIP	10K	5%	1/16W
R5617	1-218-953-11	RES,CHIP	1K	5%	1/16W
R5618	1-218-953-11	RES,CHIP	1K	5%	1/16W
R5620	1-218-965-11	RES,CHIP	10K	5%	1/16W
R5621	1-218-989-11	RES,CHIP	1M	5%	1/16W
R5622	1-218-989-11	RES,CHIP	1M	5%	1/16W
R5623	1-218-975-11	RES,CHIP	68K	5%	1/16W
R5624	1-218-969-11	RES,CHIP	22K	5%	1/16W
R5625	1-208-929-11	RES,CHIP	56K	0.50%	1/16W
R5629	1-218-975-11	RES,CHIP	68K	5%	1/16W
R5630	1-218-973-11	RES,CHIP	47K	5%	1/16W
R5632	1-218-990-11	SHORT	0		
R5633	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R5634	1-218-961-11	RES,CHIP	4.7K	5%	1/16W
R5640	1-218-977-11	RES,CHIP	100K	5%	1/16W
R5641	1-218-971-11	RES,CHIP	33K	5%	1/16W
R5643	1-218-982-11	RES,CHIP	270K	5%	1/16W
R5644	1-218-972-11	RES,CHIP	39K	5%	1/16W
R5649	1-218-973-11	RES,CHIP	47K	5%	1/16W
R5651	1-208-719-11	RES,CHIP	33K	0.50%	1/16W
R5652	1-208-715-11	RES,CHIP	22K	0.50%	1/16W
R5653	1-208-719-11	RES,CHIP	33K	0.50%	1/16W
R5654	1-208-715-11	RES,CHIP	22K	0.50%	1/16W
R5655	1-218-969-11	RES,CHIP	22K	5%	1/16W
R5657	1-216-864-11	METAL CHIP	0	5%	1/16W
R5685	1-218-967-11	RES,CHIP	15K	5%	1/16W
R5686	1-218-967-11	RES,CHIP	15K	5%	1/16W
R5688	1-218-990-11	SHORT	0		
		< SWITCH >			
S701	1-771-449-11	SWITCH, SLIDE (SPEAKER (ON/OFF))			
S702	1-572-467-21	SWITCH, PUSH (1 KEY) (PANEL RVS)			
S703	1-762-851-21	SWITCH, KEY BOARD (TIME)			
S704	1-762-851-21	SWITCH, KEY BOARD (DATE)			

	A-7085-081-A	VC-205P BOARD, COMPLETE (CR1E)			
		**********			
	A-7085-080-A	VC-205 BOARD, COMPLETE (CR1)			
		**********			
		(Ref.No.: 10,000 Series)			
		< CAPACITOR >			
C001	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C002	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C003	1-164-878-11	CERAMIC CHIP	150PF	5%	16V
C004	1-164-872-11	CERAMIC CHIP	82PF	5%	16V
C005	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C006	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C007	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C008	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C009	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C011	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V

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Ref. No.	Part No.	Description			Remarks
C012	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C013	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C014	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C018	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C019	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C021	1-104-752-11	TANTAL. CHIP	33uF	20%	6.3V
C022	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C023	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C024	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C025	1-104-752-11	TANTAL. CHIP	33uF	20%	6.3V
C026	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C027	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C029	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C030	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C032	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C034	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C035	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C036	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C037	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C038	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C039	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C042	1-164-862-11	CERAMIC CHIP	33PF	5%	16V
C045	1-162-958-11	CERAMIC CHIP	270PF	5%	50V
C046	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C047	1-164-862-11	CERAMIC CHIP	33PF	5%	16V
C049	1-164-852-11	CERAMIC CHIP	12PF	5%	16V
C051	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C052	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C053	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C054	1-164-870-11	CERAMIC CHIP	68PF	5%	16V
C055	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C056	1-164-872-11	CERAMIC CHIP	82PF	5%	16V
C058	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C061	1-164-392-11	CERAMIC CHIP	390PF	5%	50V
C062	1-164-866-11	CERAMIC CHIP	47PF	5%	16V
C063	1-164-392-11	CERAMIC CHIP	390PF	5%	50V
C066	1-164-864-11	CERAMIC CHIP	39PF	5%	16V
C067	1-164-860-11	CERAMIC CHIP	27PF	5%	16V
C068	1-164-847-11	CERAMIC CHIP	7PF	0.5PF	16V
C069	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C070	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C071	1-164-876-11	CERAMIC CHIP	120PF	5%	16V
C072	1-164-876-11	CERAMIC CHIP	120PF	5%	16V
C075	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C076	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C081	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C082	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C083	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C084	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C085	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C086	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C152	1-164-876-11	CERAMIC CHIP	120PF	5%	16V
C153	1-164-878-11	CERAMIC CHIP	150PF	5%	16V
C154	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C155	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V (CR1)

Ref. No.	Part No.	Description			Remarks
C157	1-104-848-11	TANTAL. CHIP	100uF	20%	4V
C158	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C159	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C160	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C161	1-164-868-11	CERAMIC CHIP	56PF	5%	16V
C162	1-164-858-11	CERAMIC CHIP	22PF	5%	16V
C171	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V (CR1E)
C172	1-164-934-11	CERAMIC CHIP	330PF	5%	50V (CR1E)
C173	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V (CR1E)
C191	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C192	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C193	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C194	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C201	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C202	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C204	1-164-938-11	CERAMIC CHIP	0.0015uF	10%	16V
C205	1-115-156-11	CERAMIC CHIP	1uF		10V
C206	1-164-866-11	CERAMIC CHIP	47PF	5%	16V
C207	1-164-938-11	CERAMIC CHIP	0.0015uF	10%	16V
C209	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C211	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C212	1-164-392-11	CERAMIC CHIP	390PF	5%	50V
C217	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C218	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C219	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C224	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C225	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C226	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C227	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C229	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C230	1-115-156-11	CERAMIC CHIP	1uF		10V
C232	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C233	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C234	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C235	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C237	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C239	1-115-156-11	CERAMIC CHIP	1uF		10V
C243	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C244	1-115-156-11	CERAMIC CHIP	1uF		10V
C245	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C246	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C247	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C249	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C250	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C252	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C261	1-164-862-11	CERAMIC CHIP	33PF	5%	16V (CR1)
C261	1-164-864-11	CERAMIC CHIP	39PF	5%	16V (CR1E)
C262	1-164-858-11	CERAMIC CHIP	22PF	5%	16V
C263	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C264	1-164-860-11	CERAMIC CHIP	27PF	5%	16V (CR1)

Ref. No.	Part No.	Description			Remarks
C264	1-164-862-11	CERAMIC CHIP	33PF	5%	16V (CR1E)
C265	1-164-876-11	CERAMIC CHIP	120PF	5%	16V
C401	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C402	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C403	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C404	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C405	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C406	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C407	1-164-942-11	CERAMIC CHIP	0.0068uF	10%	16V
C408	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C409	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C410	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C411	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C412	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C413	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C414	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C451	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C452	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C453	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C454	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C455	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C457	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C458	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C459	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C460	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C461	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C462	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C463	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C464	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C465	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C466	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C467	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C468	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C469	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C470	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C471	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C472	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C473	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C474	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C475	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C476	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C477	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C481	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C484	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C485	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C486	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C501	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C502	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C503	1-164-850-11	CERAMIC CHIP	10PF	0.5PF	16V
C506	1-115-156-11	CERAMIC CHIP	1uF		10V
C508	1-115-156-11	CERAMIC CHIP	1uF		10V
C509	1-135-214-21	TANTAL. CHIP	4.7uF	20%	20V
C510	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C511	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C512	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V

Ref. No.	Part No.	Description			Remarks
C513	1-115-156-11	CERAMIC CHIP	1uF		10V
C514	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C515	1-164-843-11	CERAMIC CHIP	3PF	0.25PF	16V (CR1)
C517	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C518	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C520	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C521	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C522	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C523	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C524	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C525	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C526	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C527	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C529	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C530	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C531	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C534	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C535	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C552	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C553	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C555	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C557	1-164-935-11	CERAMIC CHIP	470PF	10%	16V
C558	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C560	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C561	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C562	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C565	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C567	1-164-937-11	CERAMIC CHIP	0.001uF	10%	16V
C569	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C570	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C571	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C572	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C573	1-104-752-11	TANTAL. CHIP	33uF	20%	6.3V
C602	1-107-685-11	TANTAL. CHIP	15uF	10%	6.3V
C603	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C604	1-107-820-11	CERAMIC CHIP	0.1uF		16V
C605	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C606	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C607	1-164-858-11	CERAMIC CHIP	22PF	5%	16V
C608	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C610	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C613	1-164-943-11	CERAMIC CHIP	0.01uF	10%	16V
C801	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C802	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C803	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C804	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C805	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C806	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C807	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C808	1-104-913-11	TANTAL. CHIP	10uF	20%	16V
C809	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C810	1-113-682-11	TANTAL. CHIP	33uF	20%	10V
C811	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C812	1-164-941-11	CERAMIC CHIP	0.0047uF	10%	16V
C813	1-109-982-11	CERAMIC CHIP	1uF	10%	10V

Ref. No.	Part No.	Description			Remarks
C814	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C815	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C816	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C817	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C818	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C819	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C820	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C821	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C822	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C823	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C824	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C825	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C826	1-164-939-11	CERAMIC CHIP	0.0022uF	10%	16V
C827	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C828	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C829	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C830	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C831	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C832	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C833	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C834	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C835	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C836	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C837	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C838	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C839	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C840	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C841	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C842	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C843	1-115-169-11	TANTALUM	10uF	20%	6.3V
C844	1-115-169-11	TANTALUM	10uF	20%	6.3V
C845	1-115-169-11	TANTALUM	10uF	20%	6.3V
C846	1-115-169-11	TANTALUM	10uF	20%	6.3V
C847	1-115-169-11	TANTALUM	10uF	20%	6.3V
C848	1-115-169-11	TANTALUM	10uF	20%	6.3V
C849	1-115-169-11	TANTALUM	10uF	20%	6.3V
C850	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C851	1-107-819-11	CERAMIC CHIP	0.022uF	10%	16V
C852	1-113-985-11	TANTAL. CHIP	10uF	20%	20V
C853	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C854	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C855	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C856	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C857	1-135-214-21	TANTAL. CHIP	4.7uF	20%	20V
C858	1-164-874-11	CERAMIC CHIP	100PF	5%	16V
C859	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C869	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
		< CONNECTOR >			
CN101	1-785-090-11	CONNECTOR, CARD EDGE 54P			
CN151	1-778-591-21	CONNECTOR, BOARD TO BOARD 30P			
CN152	1-766-627-21	CONNECTOR, FFC/FPC 16P			
CN401	1-784-422-11	CONNECTOR, FFC/FPC (ZIF) 33P			
CN501	1-778-591-21	CONNECTOR, BOARD TO BOARD 30P			
CN601	1-784-419-11	CONNECTOR, FFC/FPC (ZIF) 15P			
CN801	1-779-373-11	CONNECTOR, BOARD TO BOARD 20P			

Ref. No.	Part No.	Description	Remarks
		< DIODE >	
D001	8-719-056-48	DIODE 1SS388(TPL3)	
D201	8-719-055-86	DIODE KV1470TL1-3	
D202	8-719-055-86	DIODE KV1470TL1-3	
D451	8-719-056-23	DIODE 1SS387-TPL3	
D502	8-713-103-84	DIODE 1T379-01-T8A	
D551	8-719-056-23	DIODE 1SS387-TPL3	
D601	8-719-056-26	DIODE 1SS389(TPL3)	
D602	8-719-056-23	DIODE 1SS387-TPL3	
D603	8-719-056-48	DIODE 1SS388(TPL3)	
D604	8-719-056-48	DIODE 1SS388(TPL3)	
D605	8-719-056-48	DIODE 1SS388(TPL3)	
D801	8-719-066-16	DIODE RB491D-T146	
D802	8-719-067-36	DIODE MA3ZD1200LS0	
D803	8-719-067-36	DIODE MA3ZD1200LS0	
D805	8-719-056-48	DIODE 1SS388(TPL3)	
D806	8-719-066-16	DIODE RB491D-T146	
D807	8-719-066-16	DIODE RB491D-T146	
D808	8-719-066-16	DIODE RB491D-T146	
D809	8-719-027-77	DIODE MA796-TX	
D810	8-719-066-16	DIODE RB491D-T146	
D811	8-719-066-16	DIODE RB491D-T146	
D812	8-719-056-48	DIODE 1SS388(TPL3)	
D813	8-719-056-48	DIODE 1SS388(TPL3)	
		< FUSE >	
⚠F801	1-533-981-11	FUSE, MICRO (2A/24V)	
		< FERRITE BEAD >	
FB001	1-414-229-11	INDUCTOR CHIP 0UH	
FB002	1-414-229-11	INDUCTOR CHIP 0UH	
FB201	1-414-228-11	INDUCTOR CHIP 0UH	
FB202	1-414-228-11	INDUCTOR CHIP 0UH	
FB203	1-414-228-11	INDUCTOR CHIP 0UH	
FB205	1-414-228-11	INDUCTOR CHIP 0UH	
FB206	1-414-228-11	INDUCTOR CHIP 0UH	
FB401	1-414-228-11	INDUCTOR CHIP 0UH	
FB501	1-414-228-11	INDUCTOR CHIP 0UH	
FB503	1-500-284-21	INDUCTOR CHIP 0UH	
FB504	1-500-284-21	INDUCTOR CHIP 0UH	
FB506	1-414-228-11	INDUCTOR CHIP 0UH	
FB601	1-414-228-11	INDUCTOR CHIP 0UH	
FB602	1-414-228-11	INDUCTOR CHIP 0UH	
FB801	1-414-921-11	INDUCTOR CHIP 0UH	
FB802	1-414-921-11	INDUCTOR CHIP 0UH	
FB803	1-414-921-11	INDUCTOR CHIP 0UH	
FB806	1-414-921-11	INDUCTOR CHIP 0UH	
		< IC >	
IC101	8-752-075-31	IC CXA2012R-T4	
IC151	8-759-540-53	IC BA7664FV-E2	
IC152	8-759-169-02	IC MB88344BPFV-G-BND-ER	
IC201	8-759-540-52	IC MB90097PFV-G-107-BND-ER	
IC202	8-759-540-64	IC MB87F126DLGA-G-BND-ER	

Note :
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note :
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remarks
IC204	8-752-390-53	IC CXD3131R-T6	
IC401	8-759-445-94	IC AK6480AM-E2	
IC402	8-759-560-63	IC MB91191PFF-G-116-BND-ER	
IC451	8-759-431-41	IC LB1991V-TLM	
IC452	8-759-327-67	IC LB1950V-TLM	
IC453	8-759-540-04	IC LB8113V-TLM	
IC501	8-752-386-72	IC CXD2444R-T4	
IC502	8-759-526-24	IC CCD1000Y/T2	
IC551	8-759-444-87	IC NJM324V(TE2)	
IC601	8-759-525-52	IC S-8321ASMP-DNS-T2	
IC602	8-759-525-53	IC RN5RZ31BA-TL	
IC603	8-759-525-51	IC S-80827HNNP-A9A-T200	
IC604	8-759-549-41	IC S579222PZ-TEB	
IC605	8-759-538-14	IC S-3513BEFS-TB	
IC801	8-759-491-09	IC MB4488PFV-G-BND-ER	
		< COIL >	
L001	1-412-952-11	INDUCTOR 12uH	
L002	1-414-757-11	INDUCTOR 100uH	
L004	1-414-406-11	INDUCTOR 220uH	
L005	1-414-755-11	INDUCTOR 22uH	
L007	1-412-280-31	INDUCTOR 330uH	
L009	1-410-657-21	INDUCTOR CHIP 180uH	
L010	1-412-956-21	INDUCTOR 27uH	
L012	1-412-951-11	INDUCTOR 10uH	
L013	1-414-754-11	INDUCTOR 10uH	
L014	1-410-656-11	INDUCTOR CHIP 150uH	
L015	1-412-963-11	INDUCTOR 100uH	
L018	1-410-656-11	INDUCTOR CHIP 150uH	
L019	1-412-955-11	INDUCTOR 22uH	
L020	1-412-944-11	INDUCTOR 2.7uH	
L021	1-412-947-11	INDUCTOR 4.7uH	
L022	1-412-279-31	INDUCTOR 270uH	
L151	1-414-754-11	INDUCTOR 10uH	
L152	1-412-950-11	INDUCTOR 8.2uH	
L153	1-412-948-11	INDUCTOR 5.6uH	
L171	1-412-963-11	INDUCTOR 100uH (CR1E)	
L191	1-414-754-11	INDUCTOR 10uH	
L192	1-414-754-11	INDUCTOR 10uH	
L201	1-414-754-11	INDUCTOR 10uH	
L202	1-414-754-11	INDUCTOR 10uH	
L203	1-414-754-11	INDUCTOR 10uH	
L204	1-410-658-31	INDUCTOR CHIP 220uH	
L205	1-412-955-11	INDUCTOR 22uH	
L206	1-412-945-11	INDUCTOR 3.3uH	
L207	1-414-754-11	INDUCTOR 10uH	
L209	1-414-754-11	INDUCTOR 10uH	
L261	1-412-948-11	INDUCTOR 5.6uH	
L262	1-412-950-11	INDUCTOR 8.2uH	
L501	1-414-398-11	INDUCTOR 10uH	
L554	1-414-754-11	INDUCTOR 10uH	
L555	1-414-754-11	INDUCTOR 10uH	
L601	1-414-404-11	INDUCTOR 100uH	
L804	1-416-669-11	INDUCTOR 22uH	
L805	1-416-670-11	INDUCTOR 33uH	
L806	1-416-668-11	INDUCTOR 10uH	
L807	1-416-669-11	INDUCTOR 22uH	
L808	1-416-669-11	INDUCTOR 22uH	
L809	1-416-669-11	INDUCTOR 22uH	
L810	1-416-669-11	INDUCTOR 22uH	
L811	1-416-669-11	INDUCTOR 22uH	
L812	1-414-400-11	INDUCTOR 22uH	
L813	1-414-396-21	INDUCTOR 4.7uH	
L814	1-414-396-21	INDUCTOR 4.7uH	
		< TRANSISTOR >	
Q001	8-729-031-69	TRANSISTOR 2SA1965-TL	
Q002	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO	
Q003	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO	
Q004	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q009	8-729-037-53	TRANSISTOR 2SB1462J-QR(TX).SO	
Q014	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q015	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q016	8-729-037-89	TRANSISTOR 2SC4627J-C(K8).S0	
Q018	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO	
Q022	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q023	8-729-041-23	TRANSISTOR NDS356AP	
Q024	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q027	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q030	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO	
Q032	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO	
Q033	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q034	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q035	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q036	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q037	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO	
Q038	8-729-031-69	TRANSISTOR 2SA1965-TL	
Q039	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q040	8-729-037-89	TRANSISTOR 2SC4627J-C(K8).S0	
Q041	8-729-037-89	TRANSISTOR 2SC4627J-C(K8).S0	
Q152	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO	
Q171	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO (CR1E)	
Q201	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q202	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q203	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO	
Q204	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q451	8-729-013-39	TRANSISTOR RN1101-TE85L	
Q452	8-729-013-31	TRANSISTOR 2SA1588-OY-TE85L	
Q453	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q552	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q553	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q601	8-729-041-43	TRANSISTOR HN1L02FU(TE85R)	
Q602	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q801	8-729-041-51	TRANSISTOR FMMT617TA	
Q802	8-729-043-94	TRANSISTOR CPH3106-PM-TL	
Q803	8-729-043-94	TRANSISTOR CPH3106-PM-TL	
Q804	8-729-043-94	TRANSISTOR CPH3106-PM-TL	
Q805	8-729-043-94	TRANSISTOR CPH3106-PM-TL	
Q806	8-729-043-94	TRANSISTOR CPH3106-PM-TL	
Q807	8-729-043-94	TRANSISTOR CPH3106-PM-TL	
Q808	8-729-041-24	TRANSISTOR NDS355AN	
Q809	8-729-041-24	TRANSISTOR NDS355AN	
Q810	8-729-041-24	TRANSISTOR NDS355AN	
Q811	8-729-041-24	TRANSISTOR NDS355AN	
Q812	8-729-041-24	TRANSISTOR NDS355AN	
Q813	8-729-037-61	TRANSISTOR UN9113J-(K8).SO	

Ref. No.	Part No.	Description	Remarks
Q814	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q815	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q816	8-729-041-23	TRANSISTOR NDS356AP	
Q817	8-729-041-23	TRANSISTOR NDS356AP	
Q818	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO	
Q819	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q820	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q821	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO	
Q822	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO	
Q823	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q824	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO	
Q825	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO	
Q826	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO	
Q827	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q828	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q829	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q830	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q831	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO	
Q832	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO	
Q833	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q834	8-729-037-52	TRANSISTOR 2SD2216J-QR(K8).SO	
Q835	8-729-037-74	TRANSISTOR UN9213J-(K8).SO	
Q836	8-729-037-53	TRANSISTOR 2SB1462J-QR(K8).SO	
		< RESISTOR >	
R001	1-218-938-11	RES,CHIP 56 5%	1/16W
R002	1-218-942-11	RES,CHIP 120 5%	1/16W
R003	1-218-953-11	RES,CHIP 1K 5%	1/16W
R004	1-218-957-11	RES,CHIP 2.2K 5%	1/16W
R005	1-218-945-11	RES,CHIP 220 5%	1/16W
R006	1-218-947-11	RES,CHIP 330 5%	1/16W
R007	1-218-961-11	RES,CHIP 4.7K 5%	1/16W
R008	1-218-969-11	RES,CHIP 22K 5%	1/16W
R009	1-218-971-11	RES,CHIP 33K 5%	1/16W
R010	1-218-976-11	RES,CHIP 82K 5%	1/16W
R011	1-218-969-11	RES,CHIP 22K 5%	1/16W
R015	1-218-990-11	SHORT 0	
R016	1-218-974-11	RES,CHIP 56K 5%	1/16W
R017	1-218-956-11	RES,CHIP 1.8K 5%	1/16W
R018	1-218-963-11	RES,CHIP 6.8K 5%	1/16W
R020	1-218-964-11	RES,CHIP 8.2K 5%	1/16W
R023	1-218-946-11	RES,CHIP 270 5%	1/16W
R024	1-218-946-11	RES,CHIP 270 5%	1/16W
R025	1-218-957-11	RES,CHIP 2.2K 5%	1/16W
R026	1-218-968-11	RES,CHIP 18K 5%	1/16W
R029	1-218-957-11	RES,CHIP 2.2K 5%	1/16W
R030	1-218-968-11	RES,CHIP 18K 5%	1/16W
R031	1-218-974-11	RES,CHIP 56K 5%	1/16W
R032	1-218-956-11	RES,CHIP 1.8K 5%	1/16W
R033	1-218-977-11	RES,CHIP 100K 5%	1/16W
R034	1-208-707-11	RES,CHIP 10K 0.50%	1/16W
R041	1-218-965-11	RES,CHIP 10K 5%	1/16W
R044	1-218-971-11	RES,CHIP 33K 5%	1/16W
R049	1-218-985-11	RES,CHIP 470K 5%	1/16W
R054	1-218-971-11	RES,CHIP 33K 5%	1/16W

Ref. No.	Part No.	Description	Remarks
R055	1-218-971-11	RES,CHIP 33K 5%	1/16W
R057	1-218-949-11	RES,CHIP 470 5%	1/16W
R058	1-218-953-11	RES,CHIP 1K 5%	1/16W
R060	1-218-952-11	RES,CHIP 820 5%	1/16W
R061	1-218-947-11	RES,CHIP 330 5%	1/16W
R062	1-218-947-11	RES,CHIP 330 5%	1/16W
R065	1-218-952-11	RES,CHIP 820 5%	1/16W (CR1)
R065	1-218-961-11	RES,CHIP 4.7K 5%	1/16W (CR1E)
R066	1-218-953-11	RES,CHIP 1K 5%	1/16W
R069	1-218-954-11	RES,CHIP 1.2K 5%	1/16W (CR1E)
R069	1-218-955-11	RES,CHIP 1.5K 5%	1/16W (CR1)
R072	1-218-960-11	RES,CHIP 3.9K 5%	1/16W
R073	1-218-990-11	SHORT 0	
R074	1-218-957-11	RES,CHIP 2.2K 5%	1/16W
R075	1-218-977-11	RES,CHIP 100K 5%	1/16W
R076	1-218-989-11	RES,CHIP 1M 5%	1/16W
R079	1-218-957-11	RES,CHIP 2.2K 5%	1/16W
R080	1-218-950-11	RES,CHIP 560 5%	1/16W
R085	1-218-953-11	RES,CHIP 1K 5%	1/16W
R088	1-218-950-11	RES,CHIP 560 5%	1/16W
R090	1-218-959-11	RES,CHIP 3.3K 5%	1/16W
R091	1-218-952-11	RES,CHIP 820 5%	1/16W
R093	1-218-958-11	RES,CHIP 2.7K 5%	1/16W
R098	1-218-969-11	RES,CHIP 22K 5%	1/16W
R099	1-218-966-11	RES,CHIP 12K 5%	1/16W
R100	1-218-946-11	RES,CHIP 270 5%	1/16W
R104	1-218-965-11	RES,CHIP 10K 5%	1/16W
R106	1-218-953-11	RES,CHIP 1K 5%	1/16W
R108	1-218-965-11	RES,CHIP 10K 5%	1/16W
R109	1-218-958-11	RES,CHIP 2.7K 5%	1/16W
R110	1-218-953-11	RES,CHIP 1K 5%	1/16W
R112	1-218-950-11	RES,CHIP 560 5%	1/16W
R114	1-218-985-11	RES,CHIP 470K 5%	1/16W
R123	1-216-864-11	METAL CHIP 0 5%	1/16W
R124	1-218-965-11	RES,CHIP 10K 5%	1/16W
R125	1-218-971-11	RES,CHIP 33K 5%	1/16W
R126	1-218-968-11	RES,CHIP 18K 5%	1/16W
R127	1-208-709-11	RES,CHIP 12K 0.50%	1/16W
R128	1-218-962-11	RES,CHIP 5.6K 5%	1/16W
R129	1-208-927-11	RES,CHIP 47K 0.50%	1/16W
R130	1-208-707-11	RES,CHIP 10K 0.50%	1/16W
R131	1-218-945-11	RES,CHIP 220 5%	1/16W
R132	1-208-671-11	RES,CHIP 330 0.50%	1/16W
R133	1-208-671-11	RES,CHIP 330 0.50%	1/16W
R134	1-208-707-11	RES,CHIP 10K 0.50%	1/16W
R135	1-208-927-11	RES,CHIP 47K 0.50%	1/16W
R153	1-218-946-11	RES,CHIP 270 5%	1/16W
R155	1-218-957-11	RES,CHIP 2.2K 5%	1/16W
R156	1-218-990-11	SHORT 0	
R158	1-218-939-11	RES,CHIP 68 5%	1/16W

Ref. No.	Part No.	Description				Remarks
R171	1-218-969-11	RES, CHIP		22K	5%	1/16W (CR1E)
R172	1-218-969-11	RES, CHIP		22K	5%	1/16W (CR1E)
R173	1-218-957-11	RES, CHIP		2.2K	5%	1/16W (CR1E)
R174	1-218-949-11	RES, CHIP		470	5%	1/16W (CR1E)
R202	1-218-965-11	RES,CHIP		10K	5%	1/16W
R203	1-218-973-11	RES,CHIP		47K	5%	1/16W
R205	1-218-967-11	RES,CHIP		15K	5%	1/16W
R206	1-218-970-11	RES,CHIP		27K	5%	1/16W
R207	1-218-955-11	RES,CHIP		1.5K	5%	1/16W
R208	1-218-959-11	RES,CHIP		3.3K	5%	1/16W
R209	1-218-951-11	RES,CHIP		680	5%	1/16W
R210	1-218-990-11	SHORT	0			
R211	1-218-962-11	RES,CHIP		5.6K	5%	1/16W
R212	1-218-949-11	RES,CHIP		470	5%	1/16W
R215	1-218-950-11	RES,CHIP		560	5%	1/16W
R216	1-218-943-11	RES,CHIP		150	5%	1/16W
R217	1-218-990-11	SHORT	0			
R220	1-218-947-11	RES,CHIP		330	5%	1/16W
R223	1-218-953-11	RES,CHIP		1K	5%	1/16W
R224	1-218-963-11	RES,CHIP		6.8K	5%	1/16W
R226	1-218-952-11	RES,CHIP		820	5%	1/16W
R227	1-218-943-11	RES,CHIP		150	5%	1/16W
R228	1-218-945-11	RES,CHIP		220	5%	1/16W
R229	1-218-940-11	RES,CHIP		82	5%	1/16W
R230	1-218-943-11	RES,CHIP		150	5%	1/16W
R232	1-218-947-11	RES,CHIP		330	5%	1/16W
R233	1-218-958-11	RES,CHIP		2.7K	5%	1/16W
R234	1-218-964-11	RES,CHIP		8.2K	5%	1/16W
R236	1-218-957-11	RES,CHIP		2.2K	5%	1/16W
R237	1-218-957-11	RES,CHIP		2.2K	5%	1/16W
R238	1-218-964-11	RES,CHIP		8.2K	5%	1/16W
R239	1-218-960-11	RES,CHIP		3.9K	5%	1/16W
R240	1-218-989-11	RES,CHIP		1M	5%	1/16W
R241	1-218-955-11	RES,CHIP		1.5K	5%	1/16W
R242	1-218-977-11	RES,CHIP		100K	5%	1/16W
R243	1-218-977-11	RES,CHIP		100K	5%	1/16W
R244	1-218-977-11	RES,CHIP		100K	5%	1/16W
R245	1-218-972-11	RES,CHIP		39K	5%	1/16W
R246	1-218-967-11	RES,CHIP		15K	5%	1/16W
R247	1-218-949-11	RES,CHIP		470	5%	1/16W
R248	1-218-954-11	RES,CHIP		1.2K	5%	1/16W
R249	1-218-965-11	RES,CHIP		10K	5%	1/16W
R250	1-216-809-11	METAL CHIP		100	5%	1/16W
R251	1-218-965-11	RES,CHIP		10K	5%	1/16W
R252	1-218-953-11	RES,CHIP		1K	5%	1/16W
R253	1-218-977-11	RES,CHIP		100K	5%	1/16W
R256	1-218-977-11	RES,CHIP		100K	5%	1/16W
R257	1-216-295-91	SHORT	0			
R261	1-218-946-11	RES,CHIP		270	5%	1/16W
R271	1-218-990-11	SHORT	0			
R401	1-218-953-11	RES,CHIP		1K	5%	1/16W
R402	1-218-977-11	RES,CHIP		100K	5%	1/16W
R403	1-218-977-11	RES,CHIP		100K	5%	1/16W
R404	1-218-953-11	RES,CHIP		1K	5%	1/16W
R405	1-218-977-11	RES,CHIP		100K	5%	1/16W

Ref. No.	Part No.	Description				Remarks
R406	1-218-961-11	RES,CHIP		4.7K	5%	1/16W
R407	1-218-953-11	RES,CHIP		1K	5%	1/16W
R408	1-218-953-11	RES,CHIP		1K	5%	1/16W
R409	1-218-957-11	RES,CHIP		2.2K	5%	1/16W
R410	1-218-949-11	RES,CHIP		470	5%	1/16W
R411	1-218-949-11	RES,CHIP		470	5%	1/16W
R412	1-218-949-11	RES,CHIP		470	5%	1/16W
R413	1-218-949-11	RES,CHIP		470	5%	1/16W
R414	1-218-949-11	RES,CHIP		470	5%	1/16W
R415	1-218-965-11	RES,CHIP		10K	5%	1/16W
R416	1-218-965-11	RES,CHIP		10K	5%	1/16W
R417	1-218-977-11	RES,CHIP		100K	5%	1/16W
R418	1-218-977-11	RES,CHIP		100K	5%	1/16W
R419	1-218-973-11	RES,CHIP		47K	5%	1/16W
R420	1-218-973-11	RES,CHIP		47K	5%	1/16W
R421	1-218-973-11	RES,CHIP		47K	5%	1/16W
R426	1-218-953-11	RES,CHIP		1K	5%	1/16W
R427	1-218-973-11	RES,CHIP		47K	5%	1/16W
R428	1-218-953-11	RES,CHIP		1K	5%	1/16W
R429	1-218-977-11	RES,CHIP		100K	5%	1/16W
R430	1-218-977-11	RES,CHIP		100K	5%	1/16W
R431	1-218-977-11	RES,CHIP		100K	5%	1/16W
R437	1-218-990-11	SHORT	0			
R451	1-216-789-11	METAL CHIP		2.2	5%	1/16W
R452	1-216-789-11	METAL CHIP		2.2	5%	1/16W
R453	1-216-789-11	METAL CHIP		2.2	5%	1/16W
R454	1-218-972-11	RES,CHIP		39K	5%	1/16W
R455	1-218-989-11	RES,CHIP		1M	5%	1/16W
R456	1-218-446-11	METAL CHIP		1	5%	1/16W
R457	1-218-446-11	METAL CHIP		1	5%	1/16W
R458	1-218-446-11	METAL CHIP		1	5%	1/16W
R459	1-218-965-11	RES,CHIP		10K	5%	1/16W
R460	1-218-965-11	RES,CHIP		10K	5%	1/16W
R461	1-218-965-11	RES,CHIP		10K	5%	1/16W
R462	1-218-940-11	RES,CHIP		82	5%	1/16W
R463	1-218-963-11	RES,CHIP		6.8K	5%	1/16W
R464	1-218-446-11	METAL CHIP		1	5%	1/16W
R465	1-218-951-11	RES,CHIP		680	5%	1/16W
R466	1-218-977-11	RES,CHIP		100K	5%	1/16W
R467	1-218-973-11	RES,CHIP		47K	5%	1/16W
R468	1-218-957-11	RES,CHIP		2.2K	5%	1/16W
R469	1-218-965-11	RES,CHIP		10K	5%	1/16W (CR1E)
R469	1-218-969-11	RES,CHIP		22K	5%	1/16W (CR1)
R470	1-218-965-11	RES,CHIP		10K	5%	1/16W
R471	1-218-990-11	SHORT	0			
R472	1-218-990-11	SHORT	0			
R473	1-218-990-11	SHORT	0			
R474	1-218-990-11	SHORT	0			
R475	1-218-965-11	RES,CHIP		10K	5%	1/16W
R476	1-218-968-11	RES,CHIP		18K	5%	1/16W
R477	1-218-977-11	RES,CHIP		100K	5%	1/16W
R478	1-218-973-11	RES,CHIP		47K	5%	1/16W
R479	1-218-973-11	RES,CHIP		47K	5%	1/16W
R480	1-218-977-11	RES,CHIP		100K	5%	1/16W
R481	1-216-295-91	SHORT	0			

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Ref. No.	Part No.	Description				Remarks
R482	1-216-295-91	SHORT	0			
R502	1-218-990-11	SHORT	0			
R503	1-218-990-11	SHORT	0			
R504	1-218-977-11	RES,CHIP		100K	5%	1/16W
R506	1-218-989-11	RES,CHIP		1M	5%	1/16W
R507	1-218-990-11	SHORT	0			
R508	1-218-941-11	RES,CHIP		100	5%	1/16W
R510	1-218-941-11	RES,CHIP		100	5%	1/16W
R512	1-218-985-11	RES,CHIP		470K	5%	1/16W
R527	1-218-990-11	SHORT	0			
R529	1-218-990-11	SHORT	0			
R558	1-216-295-91	SHORT	0			
R560	1-218-953-11	RES,CHIP		1K	5%	1/16W
R561	1-218-985-11	RES,CHIP		470K	5%	1/16W
R562	1-218-981-11	RES,CHIP		220K	5%	1/16W
R563	1-218-985-11	RES,CHIP		470K	5%	1/16W
R564	1-218-985-11	RES,CHIP		470K	5%	1/16W
R565	1-218-965-11	RES,CHIP		10K	5%	1/16W
R566	1-218-963-11	RES,CHIP		6.8K	5%	1/16W
R567	1-218-957-11	RES,CHIP		2.2K	5%	1/16W
R568	1-218-989-11	RES,CHIP		1M	5%	1/16W
R569	1-218-957-11	RES,CHIP		2.2K	5%	1/16W
R570	1-218-973-11	RES,CHIP		47K	5%	1/16W
R571	1-218-969-11	RES,CHIP		22K	5%	1/16W
R572	1-218-969-11	RES,CHIP		22K	5%	1/16W
R573	1-218-947-11	RES,CHIP		330	5%	1/16W
R574	1-218-953-11	RES,CHIP		1K	5%	1/16W
R575	1-218-953-11	RES,CHIP		1K	5%	1/16W
R576	1-218-953-11	RES,CHIP		1K	5%	1/16W
R577	1-218-965-11	RES,CHIP		10K	5%	1/16W
R578	1-216-001-00	METAL CHIP		10	5%	1/10W
R601	1-218-977-11	RES,CHIP		100K	5%	1/16W
R602	1-218-977-11	RES,CHIP		100K	5%	1/16W
R603	1-218-985-11	RES,CHIP		470K	5%	1/16W
R604	1-218-985-11	RES,CHIP		470K	5%	1/16W
R605	1-218-985-11	RES,CHIP		470K	5%	1/16W
R606	1-218-985-11	RES,CHIP		470K	5%	1/16W
R607	1-218-973-11	RES,CHIP		47K	5%	1/16W
R608	1-218-989-11	RES,CHIP		1M	5%	1/16W
R609	1-218-953-11	RES,CHIP		1K	5%	1/16W
R610	1-218-953-11	RES,CHIP		1K	5%	1/16W
R611	1-218-953-11	RES,CHIP		1K	5%	1/16W
R612	1-218-989-11	RES,CHIP		1M	0.50%	1/16W
R613	1-218-990-11	SHORT	0			
R614	1-208-947-11	RES,CHIP		330K	0.50%	1/16W
R615	1-218-989-11	RES,CHIP		1M	5%	1/16W
R616	1-218-977-11	RES,CHIP		100K	5%	1/16W
R617	1-218-977-11	RES,CHIP		100K	5%	1/16W
R618	1-218-977-11	RES,CHIP		100K	5%	1/16W
R619	1-218-985-11	RES,CHIP		470K	5%	1/16W
R620	1-218-953-11	RES,CHIP		1K	5%	1/16W
R622	1-218-965-11	RES,CHIP		10K	5%	1/16W
R623	1-218-965-11	RES,CHIP		10K	5%	1/16W
R624	1-218-965-11	RES,CHIP		10K	5%	1/16W
R625	1-218-965-11	RES,CHIP		10K	5%	1/16W
R626	1-218-985-11	RES,CHIP		470K	5%	1/16W
R627	1-218-953-11	RES,CHIP		1K	5%	1/16W
R628	1-218-953-11	RES,CHIP		1K	5%	1/16W
R629	1-218-953-11	RES,CHIP		1K	5%	1/16W
R630	1-218-953-11	RES,CHIP		1K	5%	1/16W
R631	1-218-953-11	RES,CHIP		1K	5%	1/16W
R632	1-218-973-11	RES,CHIP		47K	5%	1/16W
R633	1-218-953-11	RES,CHIP		1K	5%	1/16W
R634	1-218-965-11	RES,CHIP		10K	5%	1/16W
R635	1-218-977-11	RES,CHIP		100K	5%	1/16W
R636	1-218-946-11	RES,CHIP		270	5%	1/16W
R637	1-218-953-11	RES,CHIP		1K	5%	1/16W
R640	1-218-985-11	RES,CHIP		470K	5%	1/16W
R641	1-218-953-11	RES,CHIP		1K	5%	1/16W
R642	1-218-990-11	SHORT	0			
R643	1-218-989-11	RES,CHIP		1M	5%	1/16W
R644	1-218-941-11	RES,CHIP		100	5%	1/16W
R645	1-218-953-11	RES,CHIP		1K	5%	1/16W
R646	1-218-953-11	RES,CHIP		1K	5%	1/16W
R801	1-218-969-11	RES,CHIP		22K	5%	1/16W
R803	1-218-969-11	RES,CHIP		22K	5%	1/16W
R804	1-218-953-11	RES,CHIP		1K	5%	1/16W
R807	1-218-969-11	RES,CHIP		22K	5%	1/16W
R808	1-218-965-11	RES,CHIP		10K	5%	1/16W
R810	1-218-969-11	RES,CHIP		22K	5%	1/16W
R814	1-218-953-11	RES,CHIP		1K	5%	1/16W
R815	1-218-969-11	RES,CHIP		22K	5%	1/16W
R817	1-218-957-11	RES,CHIP		2.2K	5%	1/16W
R818	1-208-707-11	RES,CHIP		10K	0.50%	1/16W
R819	1-218-970-11	RES,CHIP		27K	5%	1/16W
R820	1-208-927-11	RES,CHIP		47K	0.50%	1/16W
R821	1-208-927-11	RES,CHIP		47K	0.50%	1/16W
R822	1-218-970-11	RES,CHIP		27K	5%	1/16W
R823	1-218-981-11	RES,CHIP		220K	5%	1/16W
R824	1-218-965-11	RES,CHIP		10K	5%	1/16W
R825	1-208-927-11	RES,CHIP		47K	0.50%	1/16W
R826	1-218-965-11	RES,CHIP		10K	5%	1/16W
R829	1-208-927-11	RES,CHIP		47K	0.50%	1/16W
R830	1-218-973-11	RES,CHIP		47K	5%	1/16W
R831	1-208-715-11	RES,CHIP		22K	0.50%	1/16W
R832	1-218-965-11	RES,CHIP		10K	5%	1/16W
R833	1-218-974-11	RES,CHIP		56K	0.50%	1/16W
R834	1-208-927-11	RES,CHIP		47K	0.50%	1/16W
R835	1-208-715-11	RES,CHIP		22K	0.50%	1/16W
R836	1-208-935-11	RES,CHIP		100K	0.50%	1/16W
R837	1-218-937-11	RES,CHIP		47	5%	1/16W
R838	1-208-699-11	RES,CHIP		4.7K	0.50%	1/16W
R839	1-208-707-11	RES,CHIP		10K	0.50%	1/16W
R840	1-208-683-11	RES,CHIP		1K	0.50%	1/16W
R841	1-208-707-11	RES,CHIP		10K	0.50%	1/16W
R842	1-218-945-11	RES,CHIP		220	5%	1/16W
R843	1-218-945-11	RES,CHIP		220	5%	1/16W
R844	1-218-937-11	RES,CHIP		47	5%	1/16W
R845	1-218-945-11	RES,CHIP		220	5%	1/16W
R846	1-218-947-11	RES,CHIP		330	5%	1/16W

Ref. No.	Part No.	Description			Remarks
R847	1-218-981-11	RES,CHIP	220K	5%	1/16W
R848	1-218-989-11	RES,CHIP	1M	5%	1/16W
R849	1-218-981-11	RES,CHIP	220K	5%	1/16W
R850	1-218-977-11	RES,CHIP	100K	5%	1/16W
R851	1-218-973-11	RES,CHIP	47K	5%	1/16W
R852	1-218-969-11	RES,CHIP	22K	5%	1/16W
R853	1-218-989-11	RES,CHIP	1M	5%	1/16W
R854	1-218-977-11	RES,CHIP	100K	5%	1/16W
R855	1-218-973-11	RES,CHIP	47K	5%	1/16W
R856	1-218-977-11	RES,CHIP	100K	5%	1/16W
R857	1-218-969-11	RES,CHIP	22K	5%	1/16W
R859	1-218-981-11	RES,CHIP	220K	5%	1/16W
R860	1-218-977-11	RES,CHIP	100K	5%	1/16W
R861	1-208-935-11	RES,CHIP	100K	0.50%	1/16W
R862	1-218-990-11	SHORT	0		
R863	1-208-943-11	RES,CHIP	220K	0.50%	1/16W
R864	1-208-935-11	RES,CHIP	100K	0.50%	1/16W
R865	1-208-711-11	RES,CHIP	15K	0.50%	1/16W
R866	1-208-943-11	RES,CHIP	220K	0.50%	1/16W
R867	1-208-943-11	RES,CHIP	220K	0.50%	1/16W
R868	1-208-931-11	RES,CHIP	68K	0.50%	1/16W
R869	1-218-973-11	RES,CHIP	47K	5%	1/16W
R870	1-218-977-11	RES,CHIP	100K	5%	1/16W
R871	1-218-977-11	RES,CHIP	100K	5%	1/16W
R872	1-218-981-11	RES,CHIP	220K	5%	1/16W
R873	1-218-971-11	RES,CHIP	33K	5%	1/16W
R874	1-208-935-11	RES,CHIP	100K	0.50%	1/16W
R875	1-208-715-11	RES,CHIP	22K	0.50%	1/16W
R876	1-208-885-11	RES,CHIP	820	0.50%	1/16W
R877	1-208-941-11	RES,CHIP	180K	0.50%	1/16W
R878	1-208-707-11	RES,CHIP	10K	0.50%	1/16W
R879	1-208-943-11	RES,CHIP	220K	0.50%	1/16W
R882	1-218-990-11	SHORT	0		
R883	1-218-969-11	RES,CHIP	22K	5%	1/16W
R884	1-218-969-11	RES,CHIP	22K	5%	1/16W
R890	1-218-973-11	RES,CHIP	47K	5%	1/16W
R891	1-218-971-11	RES,CHIP	33K	5%	1/16W
R892	1-218-981-11	RES,CHIP	220K	5%	1/16W
R893	1-218-969-11	RES,CHIP	22K	5%	1/16W
R894	1-218-953-11	RES,CHIP	1K	5%	1/16W
R895	1-218-971-11	RES,CHIP	33K	5%	1/16W
		< TRANSFORMER >			
T801	1-431-958-11	TRANSFORMER, DC/DC CONVERTER			
T802	1-431-958-11	TRANSFORMER, DC/DC CONVERTER			
		< VIBRATOR >			
X401	1-767-205-21	VIBRATOR, CRYSTAL (20MHz)			
X501	1-767-981-11	VIBRATOR, CRYSTAL (28.375000MHz)(CR1E)			
X501	1-767-982-11	VIBRATOR, CRYSTAL (28.636363MHz)(CR1)			
X601	1-767-980-21	VIBRATOR, CERAMIC (20MHz)			
X602	1-760-458-21	VIBRATOR, CRYSTAL (32.768KHz)			

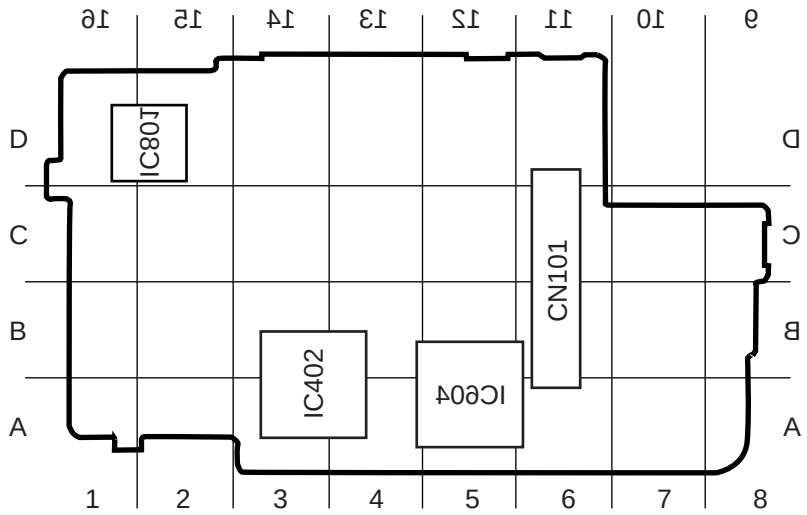
Ref. No.	Part No.	Description	Remarks
		MISCELLANEOUS	
		**********	
63	1-547-787-41	FILTER BLOCK, OPTICAL	
112	1-958-850-11	HARNESS (MC-72)	
152	1-670-506-11	FP-686 FLEXIBLE BOARD	
163	1-505-979-11	SPEAKER (1.7CM)	
202	1-803-185-11	INDICATOR MODULE, LIQUID CRYSTAL	
251	1-694-444-11	TERMINAL BOARD, BATTERY	
252	1-670-505-21	FP-685 FLEXIBLE BOARD	
MIC1	1-542-355-11	MICROPHONE, CAP	
		ACCESSORIES	
		**********	
⚠	1-475-851-21	ADAPTOR, AC (CR1)	
⚠	1-475-851-31	ADAPTOR, AC (CR1E)	
⚠	1-690-827-11	CORD SET, POWER (CR1E:AEP)	
⚠	1-775-549-21	CORD, POWER (CR1)	
⚠	1-783-374-11	CORD, POWER (CR1E:UK,E)	
	1-783-738-11	CORD, CONNECTION AV CABLE (1.7m)	(CR1/CR1E:E)
	1-783-738-21	CORD, CONNECTION AV CABLE (1.5m)	(CR1E:AEP,UK)
⚠	1-783-739-11	DK-115 CORD, CONNECTION	
	1-790-069-21	CORD, CONNECTION (MUVI CAP CABLE)	
	3-050-706-01	CASE, SOFT	
	3-864-023-11	MANUAL, INSTRUCTION (ENGLISH/FRENCH/GERMAN/RUSSIAN)	(CR1E)
	3-864-023-21	MANUAL, INSTRUCTION (SPANISH/ITALIAN/DUTCH/PORTUGUESE)	(CR1E)
	3-864-023-31	MANUAL, INSTRUCTION (CHINESE)	(CR1E)
	3-864-023-41	MANUAL, INSTRUCTION (ENGLISH/FRENCH)	(CR1)
	A-7010-733-A	CARTRIDGE (CR1E)	
	X-3948-910-3	CAP ASSY, LENS	

Note :	**Note :**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

〈PARTS REFERENCE SHEET〉

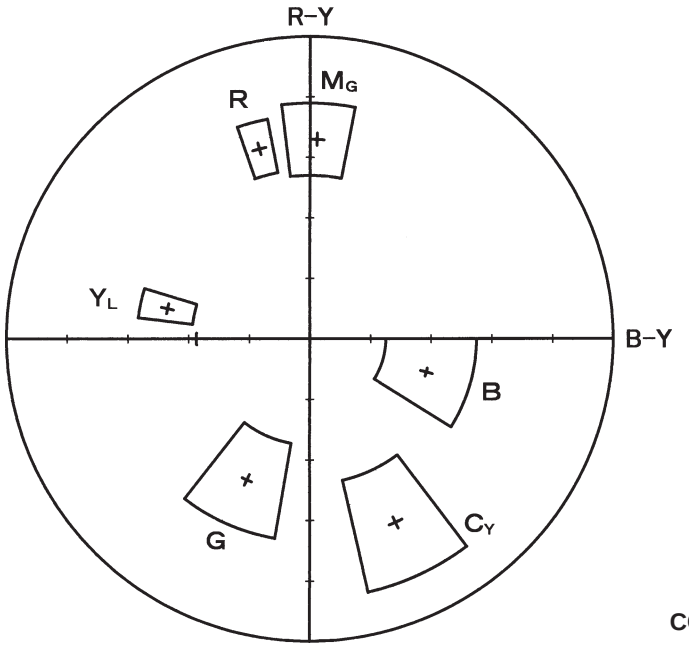
You can find the parts position of location of mount locations applying to VC-205 board of a set.

VC-205 CCD-CR1/CR1E SIDE A



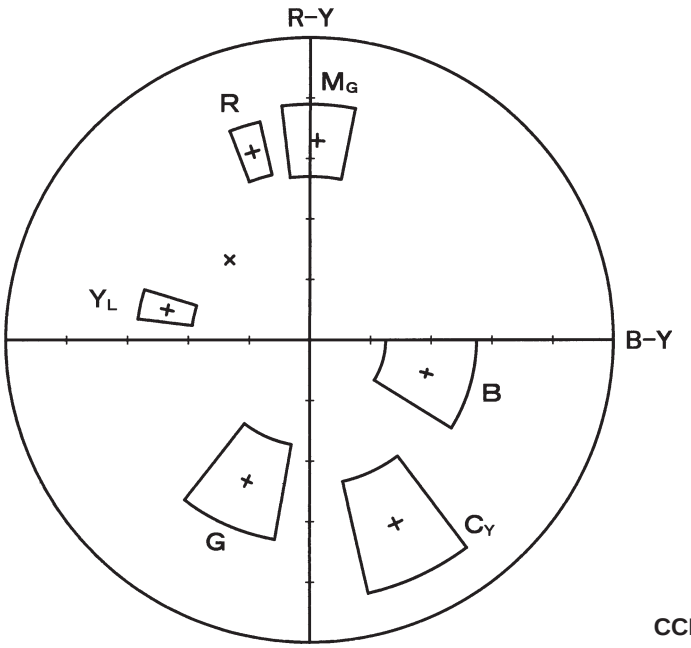
SIDE B CCD-CR1/CR1E VC-205

⟨FOR CAMERA COLOR REPRODUCTION ADJUSTMENT⟩



CCD-CR1

Take a copy of CAMERA COLOR REPRODUCTION FRAME and Parts referencesheets with a clear sheet for use.



CCD-CR1E

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